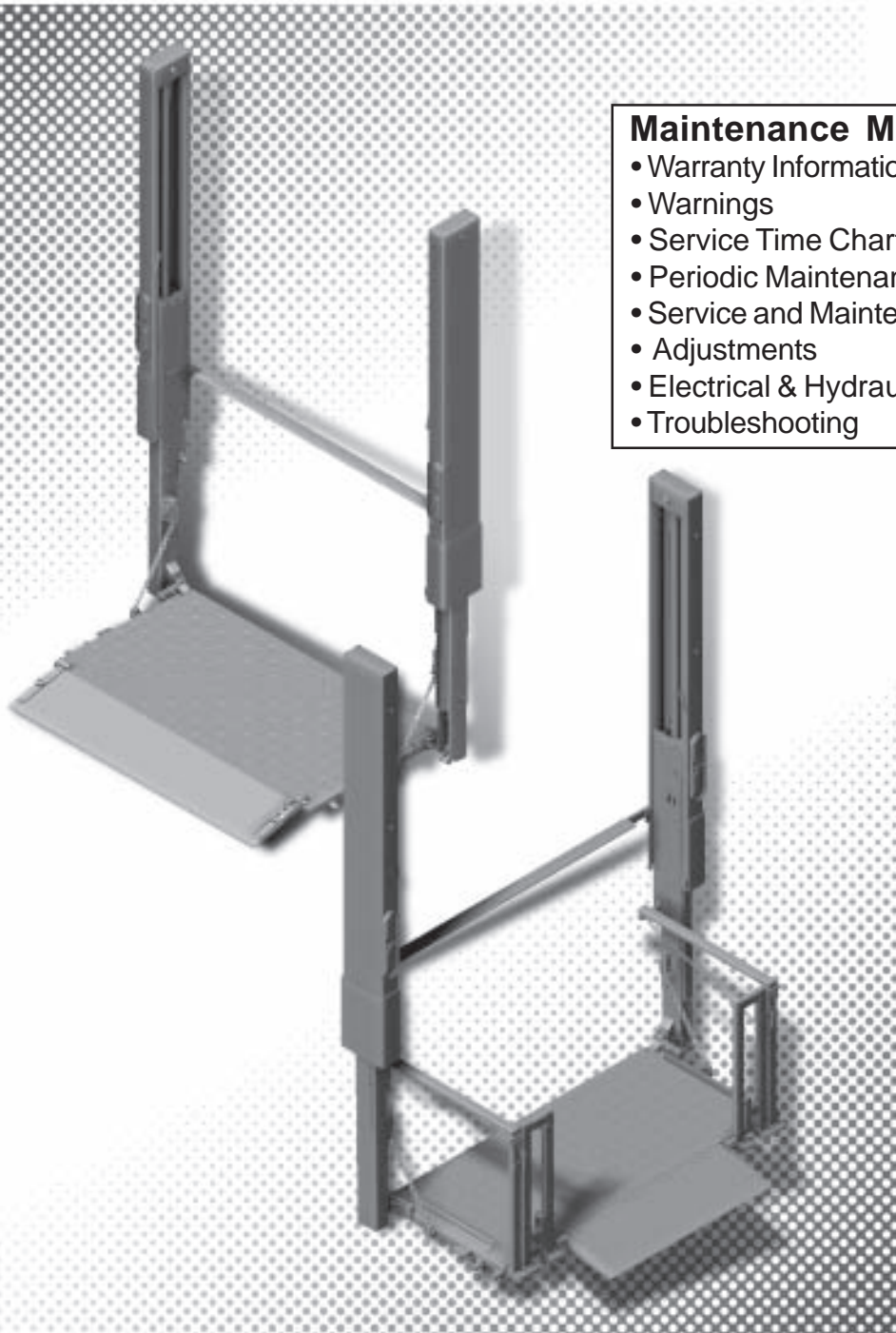


M-01-24
REV. -01
NOVEMBER 2002

Maintenance Manual Contains:

- Warranty Information
- Warnings
- Service Time Chart
- Periodic Maintenance Checklist
- Service and Maintenance Instructions
- Adjustments
- Electrical & Hydraulic Schematics
- Troubleshooting



MAXON[®]
LIFT CORP.

BMR-A-ONE PIECE BMR-A-CS MAINTENANCE MANUAL

MAXON[®]

LIFT CORP.

11921 Slauson Ave.
Santa Fe Springs, CA. 90670

CUSTOMER SERVICE:

TELEPHONE (562) 464-0099 TOLL FREE (800) 227-4116

FAX: (888) 771-7713

NOTE: For latest version Manuals (and replacements), download Manuals from Maxon's website at www.maxonlift.com.

WARRANTY POLICY & PROCEDURE

NEW LIFTGATE WARRANTY

Term of Warranty: 2 Years from Date of In-Service

Type of Warranty: Full Parts and Labor

MAXON agrees to replace any components which are found to be defective during the first 2 years of service, and will reimburse for labor based on MAXON's Liftgate Warranty Flat Rate Labor Schedule. (Call MAXON Customer Service for a copy).

All claims for warranty must be received within 30 Days of the repair date, and include the following information:

1. Liftgate Model Number
2. Liftgate Serial Number
3. Detailed Description of Problem
4. Corrective Action Taken, and Date of Repair.
5. Parts used for Repair, Including MAXON Part Number(s).
6. MAXON R.M.A. # and/or Authorization # if applicable (see below).
7. Person contacted at MAXON if applicable.

All warranty repairs must be performed by an authorized MAXON warranty station. For major repairs, MAXON Customer Service must be notified and an "Authorization Number" obtained. Major repairs would generally be considered repairs made to the structural assembly of the liftgate and/or repairs not outlined in the MAXON Liftgate Warranty Flat Rate Schedule.

Major components (i.e. hydraulic pumps, cylinders, valves, or failed structural parts) must be returned, freight pre-paid, prior to the claim being processed. To ensure timely processing of these warranty claims, an R.M.A. (Returned Merchandise Authorization) number must be obtained from MAXON Customer Service prior to the return of any defective part. Defective Parts must be returned within 60 days of the claim date for consideration to:

MAXON Lift Corp.

16205 Distribution Way, Cerritos, CA 90703

Attn: RMA# _____

MAXON's warranty policy does not include the reimbursement for travel time, towing, vehicle rental, service calls, oil, batteries, defects due to misuse or abuse, or loss of income due to downtime. Fabrication of parts, which are available from MAXON, are also not covered.

MAXON's Flat Rate Labor Schedule takes into consideration the time required for diagnosis of a problem.

PURCHASE PART WARRANTY

Term of Warranty: 1 Year from Date of Purchase

Type of Warranty: Part Replacement

MAXON will guarantee all returned genuine replacement parts upon receipt and inspection of parts and invoice.

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Comply with the following **WARNINGS** while maintaining Liftgates. See Operation Manual M-01-23 for operating safety requirements.

WARNING

- Read and understand the instructions in this **Maintenance Manual** before performing maintenance on the Liftgate.
- Before operating the Liftgate, read and understand the operating instructions in **Operation Manual M-01-23**.
- Comply with all **WARNING** and instruction decals attached to the Liftgate.
- Keep decals clean and legible. If decals are defaced or missing, replace them. Free replacement decals are available from **Maxon Customer Service**.
- Use only **Maxon Authorized Parts** for replacement parts (refer to **Parts Manual M-01-25**). Provide Liftgate model and serial number information with your parts order. Order replacement parts from:

MAXON LIFT CORP. Customer Service
11921 Slauson Ave., Santa Fe Springs, CA 90670
Phone: (800) 227-4116

- To order parts by e-mail, submit orders to partssales@maxonlift.com.
- Consider the safety and location of bystanders and location of nearby objects when operating the Liftgate. Stand to one side of the platform while operating the Liftgate.
- Do not allow untrained persons to operate the Liftgate.
- Do not stand under, or allow obstructions under the platform when lowering the Liftgate. **Be sure your feet are clear of the Liftgate.**
- **Keep fingers, hands, arms, legs, and feet clear of moving Liftgate parts (and platform edges) when operating the Liftgate.**
- **Disconnect Liftgate power cable from battery** before repairing or servicing Liftgate.
- Wear appropriate safety equipment such as protective eyeglasses, faceshield and clothing while performing maintenance on the Liftgate and handling the battery. Debris from drilling and contact with battery acid may injure unprotected eyes and skin.
- Be careful working by an automotive type battery. Make sure the work area is well ventilated and there are no flames or sparks near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.
- If an emergency situation arises (vehicle or Liftgate) while operating the Liftgate, release the control Toggle Switch and the Liftgate will stop.
- A correctly installed Liftgate operates smoothly and reasonably quiet. The only noticeable noise during operation comes from the pump unit while the platform is raised and folded on all models, or lowered on Power Down models. Listen for scraping, grating and binding noises and correct the problem before continuing to operate Liftgate.
- If it is necessary to stand on the platform while maintaining the Liftgate, keep your feet and any objects clear of the inboard edge of the platform. Your feet or objects on the platform could be trapped between the platform and the Liftgate extension plate.
- Never perform unauthorized modifications on the Liftgate. Modifications may result in early failure of the Liftgate and may create hazards for Liftgate operators and maintainers.

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DECALS

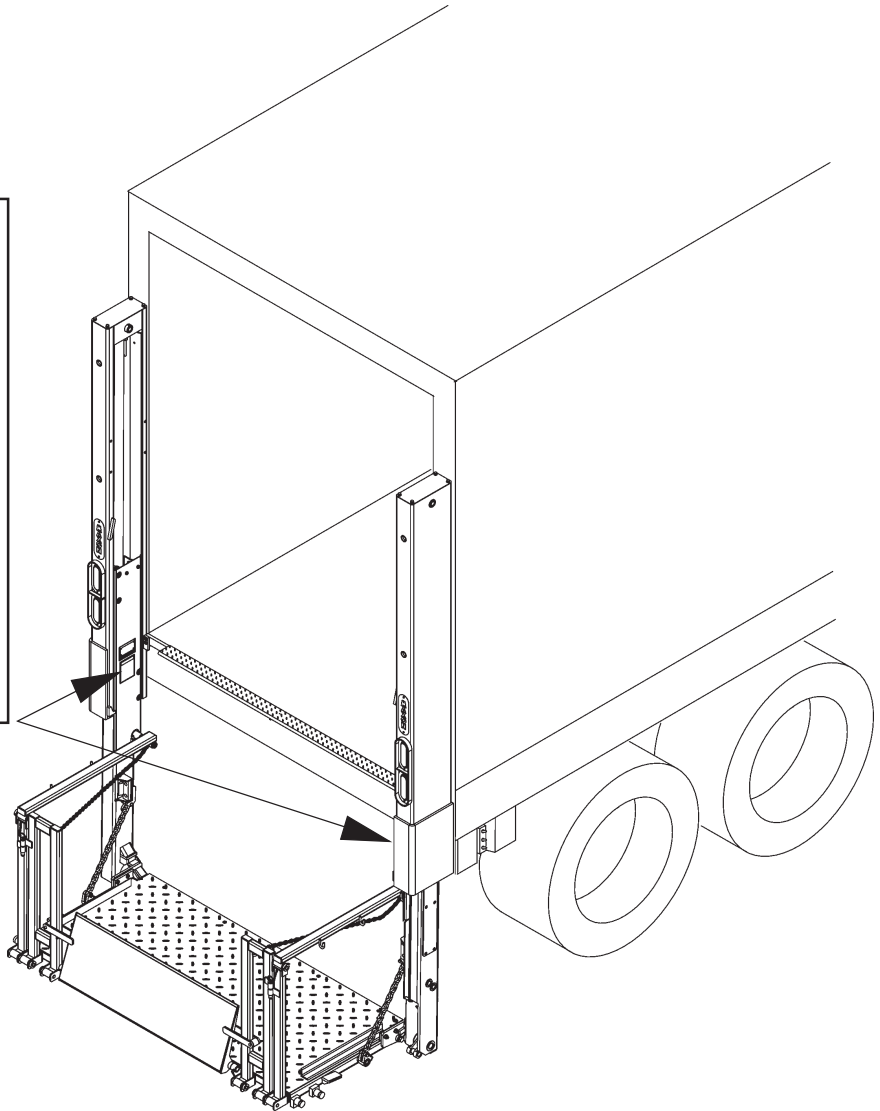
CAUTION

Comply with Welding CAUTION Decals on Liftgate Runners.

NOTE: See **Operation Manual M-01-23** to find the other decals on Liftgate.

! CAUTION !

When performing any electrical welding operations to the structure of this lift, be careful to connect the ground lead to the liftgate component being welded (e.g. runner assembly, column assembly, platform assembly), and as close to the area being welded as possible. Because the separate assemblies on the BMR Series lifts are insulated by self-lubricated bearings, failure to do so will cause severe damage to electrical



SERVICE TIME CHART

SERVICE TO BE PERFORMED	TIME REQ'D. (HOURS)	
CHANGE LIFT CYLINDER	1.50	
CHANGE PLATFORM CLOSER CYLINDER	1.00	
CHANGE MOTOR	0.50	
CHANGE MOTOR SOLENOID	0.25	
CHANGE POWER PACK, COMPLETE	1.00	
CHANGE/CLEAN CARTRIDGE VALVE	0.25	
CHANGE RIDE EQUALIZER	0.50	
CHANGE EXTERNAL RELIEF VALVE	0.50	
CHANGE OUTSIDE SWITCH ASSEMBLY	0.50	
CHANGE CIRCUIT BREAKER	0.50	
CHANGE ROLLERS OR ROLLER BEARINGS (PER RUNNER)	1.50	
CHANGE PLATFORM MAIN SECTION	2.00	
CHANGE PLATFORM FOLDING SECTION	STEEL	1.00
	ALUMINUM	2.00
REPLACE PLATFORM SUPPORT CHAIN ASSEMBLY (EACH)	0.50	
REPLACE FOLDING SECTION HINGE BEARINGS	STEEL	1.50
	ALUMINUM	2.00
REPLACE FOLDING SECTION HINGE PINS	STEEL	0.75
	ALUMINUM	1.50
REPLACE MAIN HINGE PINS (PER SIDE)	0.50	
REPLACE MAIN PLATFORM HINGE BRNGS.	PER SIDE	1.00
	BOTH SIDES	1.50
CHANGE EXTERNAL HYDRAULIC HOSES (EACH)	0.25	
CHANGE CLOSER CYLINDER HOSE IN RUNNER	2.00	
BLEED LIFT CYLINDER (PER SIDE)	1.00	
RESET PUMP AND RELIEF VALVE PRESSURE	0.50	
CHANGE RUNNER SWITCH HARNESS ASSEMBLY	2.50	
CHANGE CYLINDER LOCK VALVE HARNESS	1.50	
REPLACE RAILING PINS	0.50	

Refer to Warranty Flat Rate Manual for more information.

PERIODIC MAINTENANCE CHECKLIST



WARNING

Never operate the Liftgate with parts loose or missing.

Annually

Change spin-on oil filter. Visually check the entire Liftgate for excessively worn parts and broken welds, especially the Hinge Pins. See **Parts Manual (M-01-25)** for replacement parts. Also, do the **Semi-annual** and **Quarterly Maintenance** checks.

Semi-annually

Visually check the Platform Hinge Pins for excessive wear and broken welds. See **Parts Manual (M-01-25)** for replacement parts. Also, do the **Quarterly Maintenance** checks.

Quarterly

Check the hydraulic fluid level in the Pump Reservoir. If hydraulic fluid must be added, select the correct grade of fluid to use at your location.

+20 to +150 Degrees F - Grade ISO 32
Below + 20 Degrees F - Grade ISO 15

If Hydraulic Fluid appears contaminated, refer to the **CHANGING HYDRAULIC FLUID** procedure on following page.

Keep track of the grade of hydraulic fluid in the Pump Reservoir and never mix two different grades of fluid.

Check Hoses and Fittings for chaffing and fluid leaks. Replace if necessary.

Check electrical wiring for chaffing and make sure wiring connections are tight and free of corrosion.

Check that all WARNING and instruction decals are in place and legible.

Check that all roll pins are in place and protrude evenly from both sides of Hinge Pin collar. Replace roll pins if necessary.

Check each end of the two platform chains to make sure they're fastened properly.

CHANGING HYDRAULIC FLUID

CAUTION

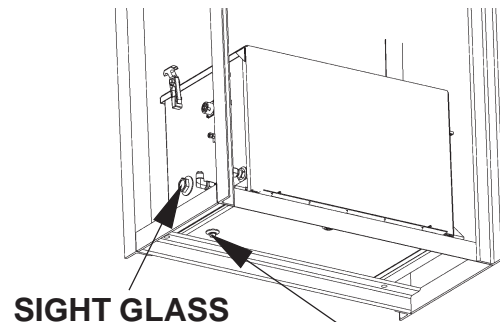
Keep dirt, water and other contaminants from entering the hydraulic system. Before opening the hydraulic fluid reservoir filler cap, drain plug and hydraulic lines, clean up contaminants that can get in the openings. Also, protect the openings from accidental contamination.

GRAVITY DOWN LIFTGATES

1. Place empty 3 Gallon Container under Drain Plug.
2. Open and lower Platform. Remove the Drain Plug (**FIG. 1**). Drain hydraulic fluid from system. Re-install Drain Plug.
3. Remove Filler Cap (**FIG. 1**) and refill reservoir until Sight Glass (**FIG. 1**) is half full. Use correct grade of hydraulic fluid for your location.

+20 to +150 Degrees F - Grade ISO 32
Below + 20 Degrees F - Grade ISO 15

4. Re-install Filler Cap.



SIGHT GLASS
DRAIN PLUG
FIG. 1

POWER DOWN LIFTGATES

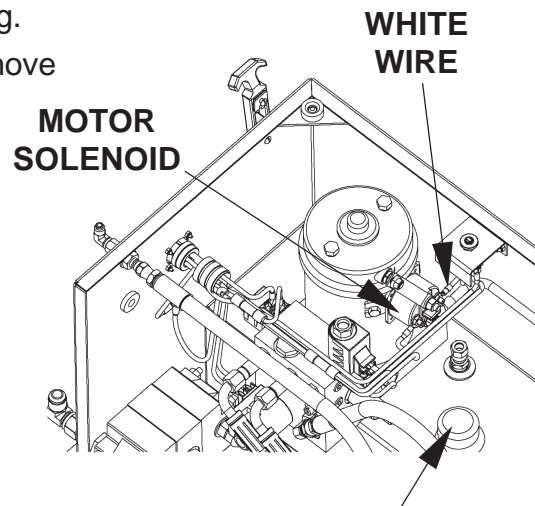
1. Place an empty 3 Gallon Container under Drain Plug.
2. Open and raise Platform to vehicle bed height. Remove the Drain Plug (**FIG. 2**).
3. Disconnect the White Wire (**FIG. 2**) from Motor Solenoid. Lower the Platform while draining hydraulic fluid from system. Re-install Drain Plug. Reconnect the White Wire to Motor Solenoid.

4. Remove Filler Cap and refill reservoir until Sight Glass (**FIG. 2**) is half full. Use correct grade of hydraulic fluid for your location.

+20 to +150 Degrees F - Grade ISO 32
Below + 20 Degrees F - Grade ISO 15

5. Raise Platform to vehicle bed height. Check hydraulic fluid again and, if needed, add more hydraulic fluid until Sight Glass (**FIG. 2**) is half full.

6. Re-install Filler Cap (**FIG. 2**).



MOTOR SOLENOID
WHITE WIRE
FILLER CAP
FIG. 2

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BLEEDING HYDRAULIC SYSTEM

NOTE: Perform this procedure at a place where Liftgate Platform can be lowered to lowest point of travel.
Get a helper to operate Liftgate control switch.

1. Use **UP/DOWN** toggle switch to lower the opened platform to the ground.
2. Loosen, but do not disconnect the Cylinder Line Fitting from the Pressure Compensated Flow Control Valve (**FIG. 3**) on top of both Lift Cylinders.

**PRESSURE COMPENSATED
FLOW CONTROL VALVE**

CYLINDER LINE FITTING

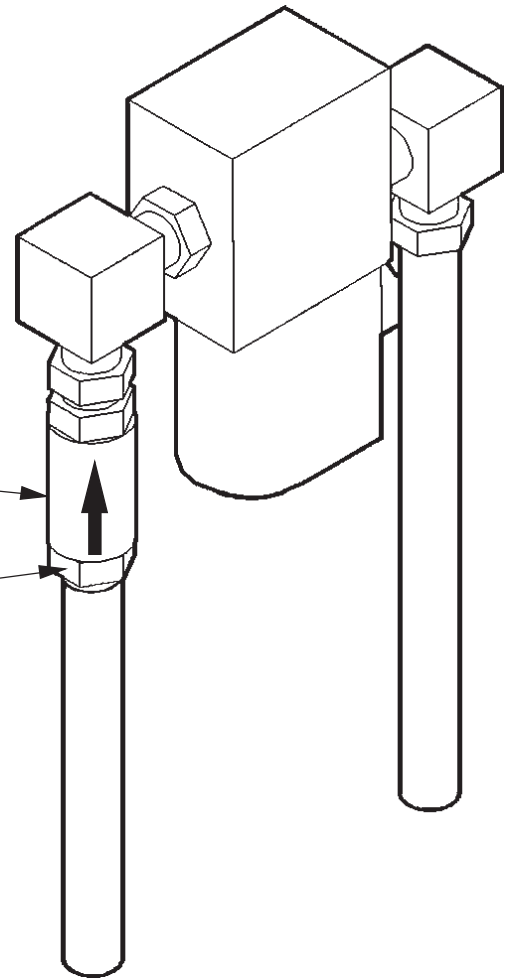


FIG. 3

3. Set the **UP/DOWN** switch on the RH Runner in the **UP** position for approximately one second and then release the switch. Wait ten seconds and then switch to **UP** and release. Repeat this step until there is no air bubbling from the loosened line fittings.
4. Tighten Cylinder line fitting to Pressure Compensated Flow Control Valve (**FIG. 3**).
5. Use **UP/DOWN** toggle switch to raise and lower the platform to make sure the Liftgate operates correctly.

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REPLACING PARTS

CLOSING CYLINDER REPLACEMENT

1. Open and **LOWER** Platform to ground.
2. Disconnect the Hydraulic Hose from lower end of Cylinder (**FIG. 4**). Plug hose to prevent spills.
3. Remove the Lower Roll Pin from Inside Coupling (**FIG. 4**) and then remove Lower Pin.
4. Remove the Upper Roll Pin (**FIG. 4**) from the Runner and then remove the Upper Pin.
5. Remove Cylinder from Runner (**FIG. 4**).
6. Place replacement Cylinder in the correct position as shown in **FIG. 4**.
7. Install Upper Pin (**FIG. 4**) and Roll Pin in upper end of Cylinder and Runner.
8. Install Lower Pin (**FIG. 4**) and Roll Pin in lower end of Cylinder and Inside Coupling.
9. Re-connect Hydraulic Hose to Cylinder (**Fig. 4**).

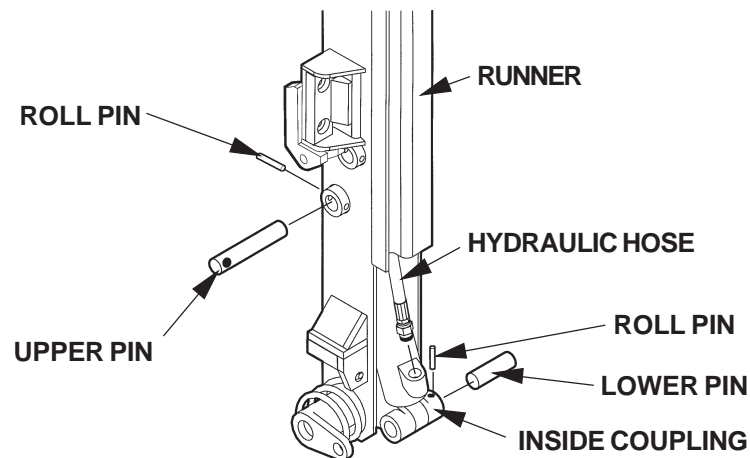


FIG. 4

LIFTING CYLINDER REPLACEMENT

⚠ WARNING

Use floor jack and jack stands to support Platform while performing this procedure.

1. Raise the open Platform about 20" above the ground. Place a jack and jack stands under the Platform (**FIG. 5A**) and support Platform on jack and jack stands. Measure and record the distance between the Upper and Lower Cylinder Pins. Keep measurement for reference when installing new Cylinder.

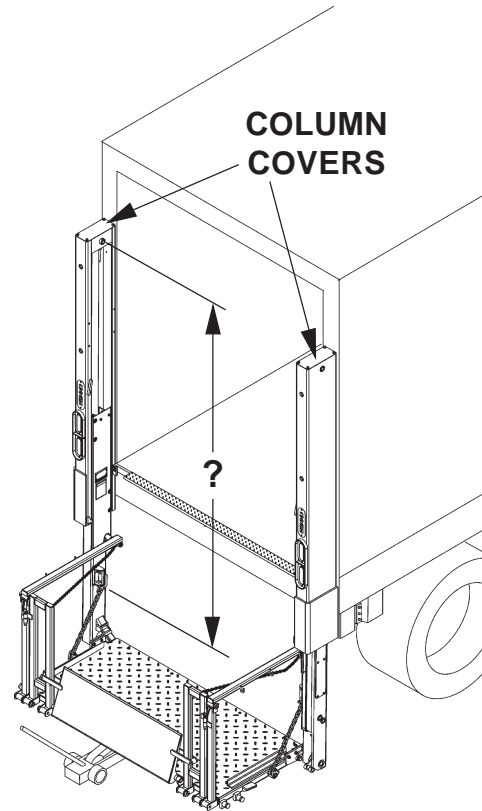


FIG. 5A

2. Remove Cover from the top of the Column (**FIG. 5A**).
3. Loosen and disengage Nut #1 (**FIG. 5B**) from Elbow on top of Cylinder. Remove Elbow from Cylinder (**FIG. 5B**). Keep Elbow to re-install on new Cylinder. Loosen and disengage Nut #2 from bottom of Flow Compensator Valve.

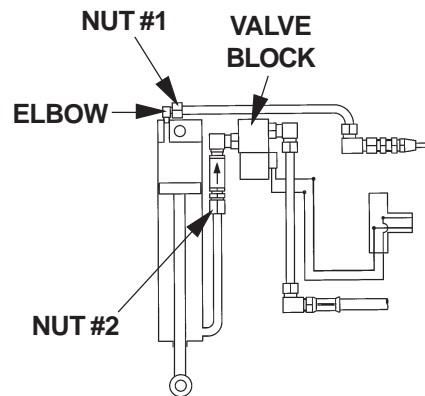


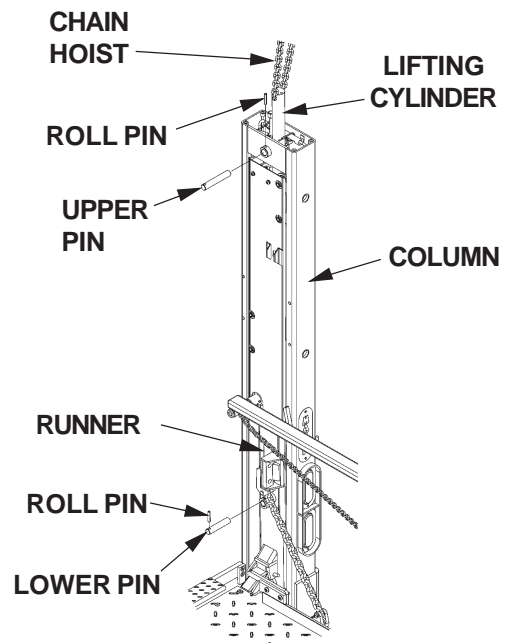
FIG. 5B

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- Remove Upper Roll Pin & Pin from Cylinder (**FIG. 6A**). Use a Chain Hoist or equivalent lifting device to support the upper end of Cylinder. Remove Lower Roll Pin & Pin. Hoist the Cylinder out from the top of the Column and lower it to the ground.

CAUTION
 Move old cylinder out of the way to prevent possible trip hazard.



**REMOVING CYLINDER
 (CS PLATFORM SHOWN)**

FIG. 6A

- Remove plastic plug from line fitting on new Cylinder. To prevent fluid spills, fasten a drain hose with 1/4" NPT Female end to line fitting on bottom end of cylinder as shown in **FIG. 6B**. Place other end of hose in 1 gallon container. Extend Cylinder until distance measured between butt-end and rod-end pin bores is the same as distance recorded in **Step 1**.

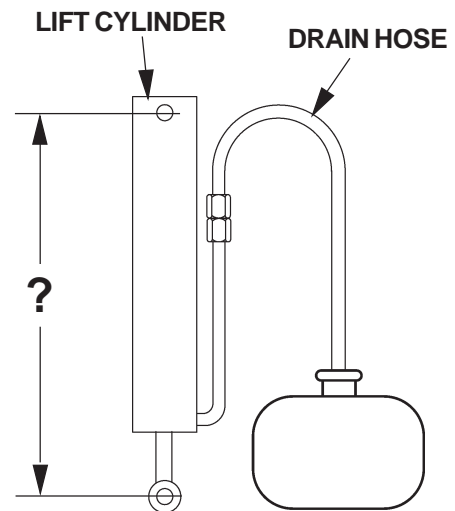


FIG. 6B

- Reverse Steps 4,3,2 to install.

RUNNER REPLACEMENT

1. Use Control Box to Lower the Platform to approximately 25" above the ground. Support Platform with forklift or equivalent lifting device.
2. Remove the Bolts and Pins (**FIG. 7A**) holding Platform and Connector Bar to Runners. Next, remove Cotter Pins and Pins to remove Chain Arms from both Runners. If Liftgate is equipped with CS Platform, remove Roll Pins and Pins to remove Railings from (**FIG. 7B**) both Runners. Unbolt and remove Cover from Runner.

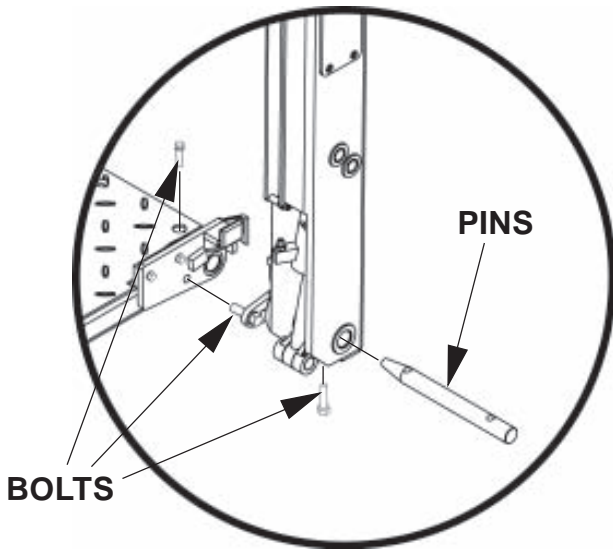


FIG. 7A

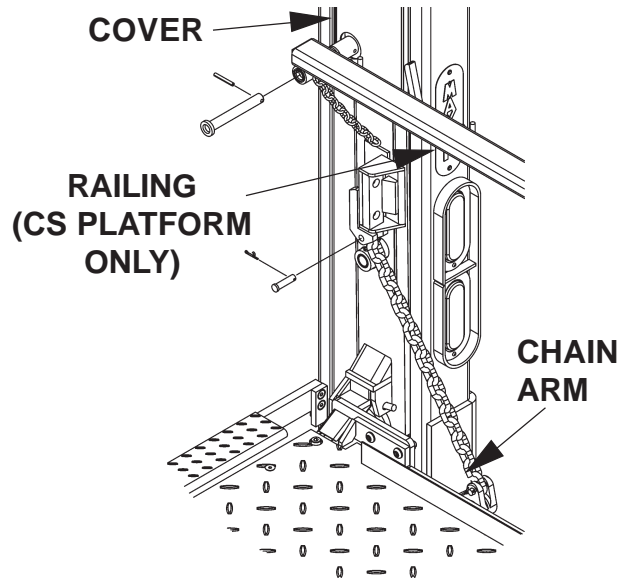


FIG. 7B

3. Use a forklift or equivalent lifting device to move the Platform approximately 6" towards the front of the vehicle to clear the Platform away from the attaching points on the Runners. Now that Platform is clear of Runners, raise the Runners a few inches and move Platform toward the back of the vehicle for sufficient room to remove the Runners.
4. Use Control Box to lower Runners to the ground in the same way as lowering the Platform. Remove the Upper and Lower Pad Assemblies (**FIG. 7C**) by loosening and removing (2) hex head bolts and (2) lock washers from each Pad.

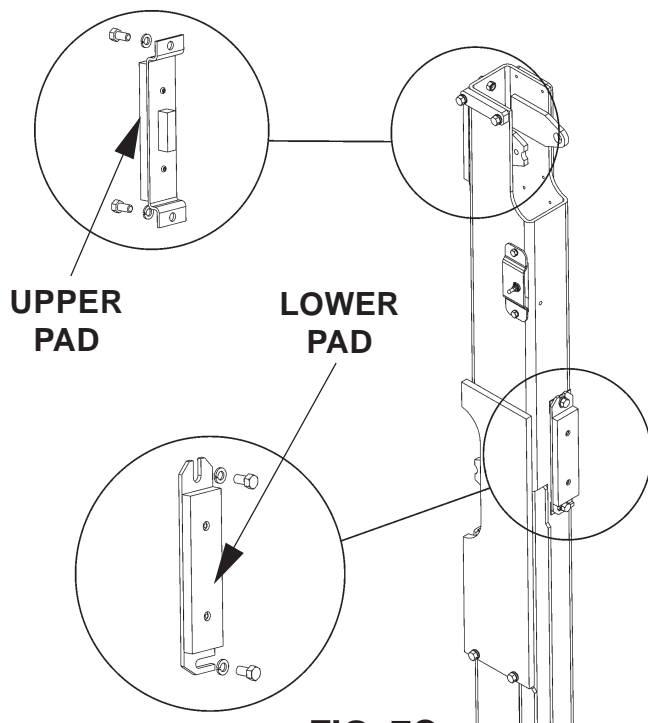


FIG. 7C

5. Remove Tandem Assembly by loosening and removing bolt from Anchor Pin (**FIG. 8A**). Remove the Anchor Pin (**FIG. 8B**) that holds Tandem Assembly to Runner. Remove the Tandem Assembly (**FIG. 8C**).

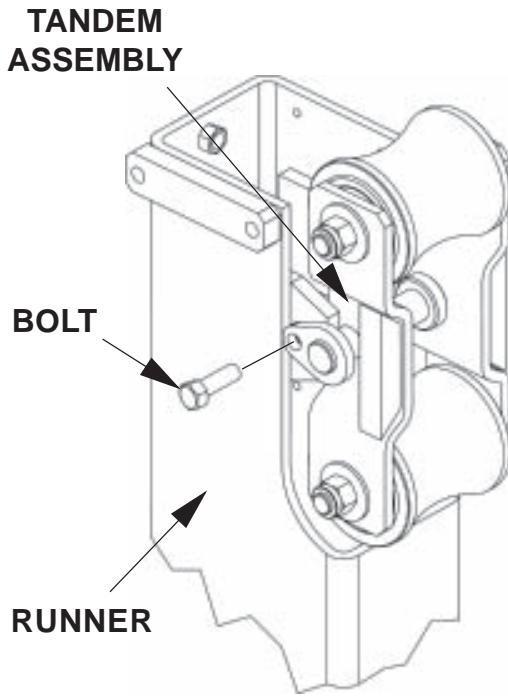


FIG. 8A

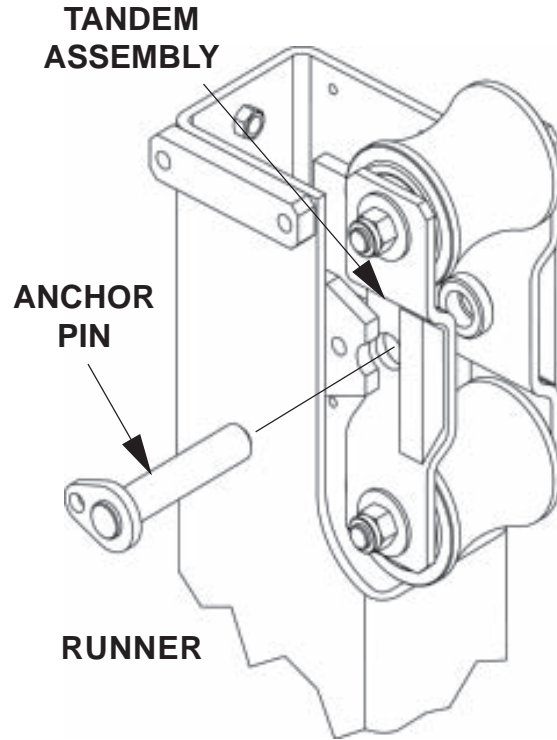


FIG. 8B

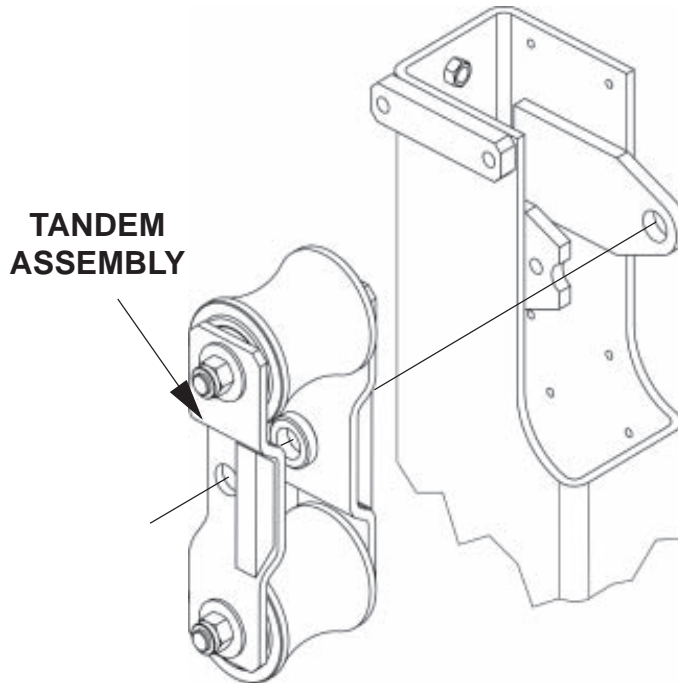


FIG. 8C

RUNNER REPLACEMENT - Continued

CAUTION

DO NOT remove Lifting Cylinder Upper Pin until instructed to remove it.

NOTE: If replacing LH Runner, skip Steps 6, 7, 8, and 9.

6. Remove Lifting Cylinder Lower Roll Pin and Lower Pin (**FIG. 9A**). Use **UP/DOWN** Runner Switch to raise Lift Cylinder to fully retracted position.
7. Disconnect Runner Switch Cable from Connector Adapter near bottom of Runner (**FIG. 9B**).

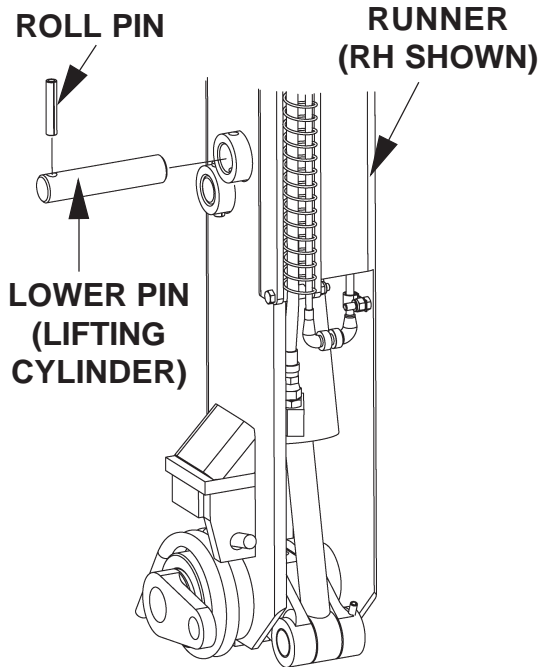


FIG. 9A

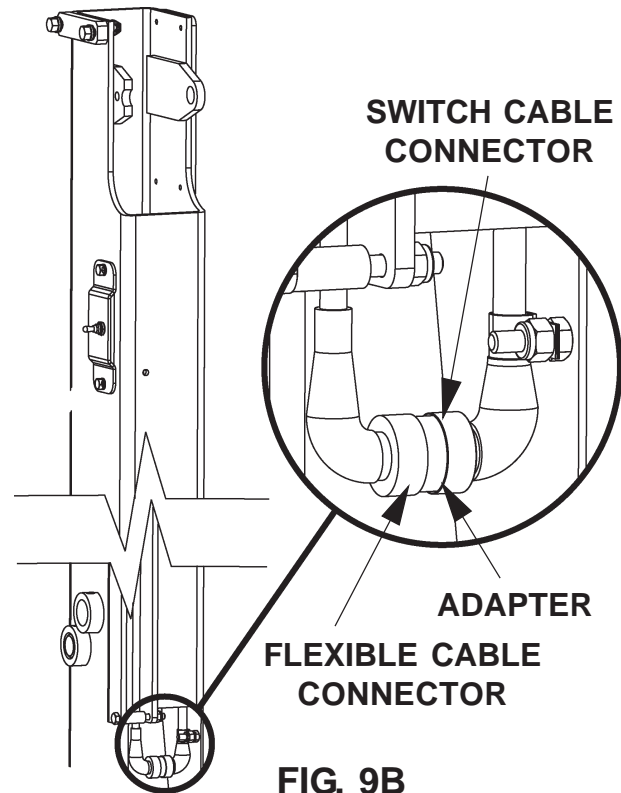


FIG. 9B

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8. Disconnect hydraulic hose from Closing Cylinder (**FIG. 10A**). Use drain pan to collect hydraulic fluid from hose.

9. Pull Spring Guard, Flexible Cable (with Adapter), and hydraulic hose away from the channel at bottom of Runner (**FIG. 10A**).

NOTE: If Vehicle bed height is 54" or more above ground level, skip Step 10. If less than 54", do step 10.

10. Remove Lifting Cylinder from Column by doing Lifting Cylinder removal steps in the **LIFTING CYLINDER REPLACEMENT** procedure (this section of the manual).

11. To remove Runner from Column, grasp lower end of Runner and pull towards the middle of vehicle (**FIG. 10B**).

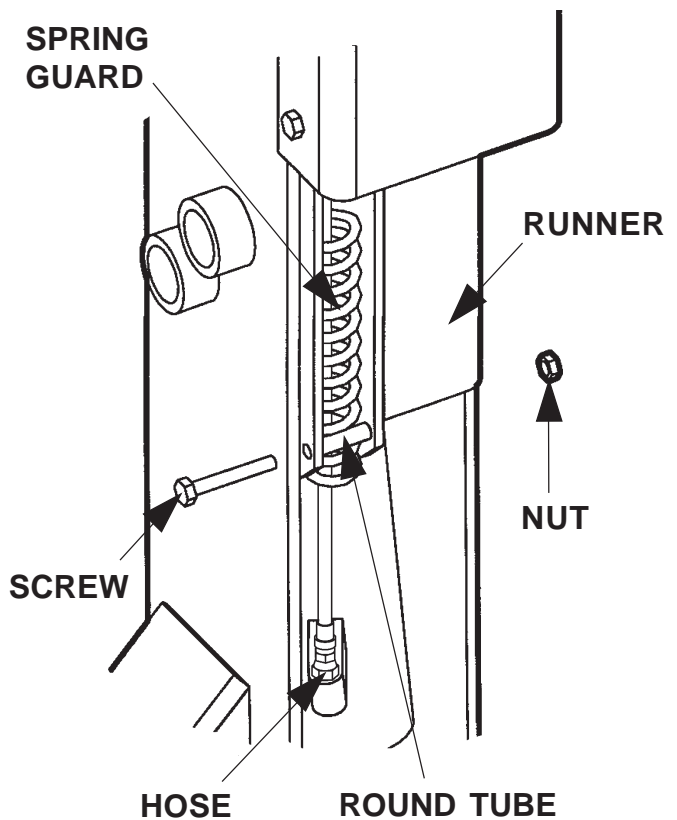


FIG. 10A

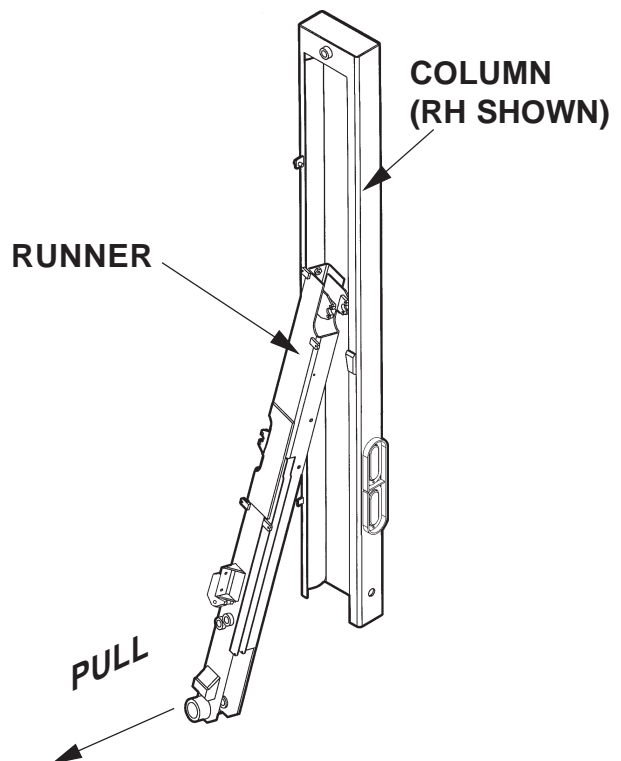


FIG. 10B

RUNNER REPLACEMENT - Continued

12. If RH Runner is being replaced, unbolt Switch Mounting Bracket from Runner by removing (2) bolts and (2) lock washers (**FIG. 11**). Loosen and remove lock nut holding clamp and Runner Switch Cable to Column (**FIG. 11**). Pull Runner Switch, Bracket, and Cable from runner.

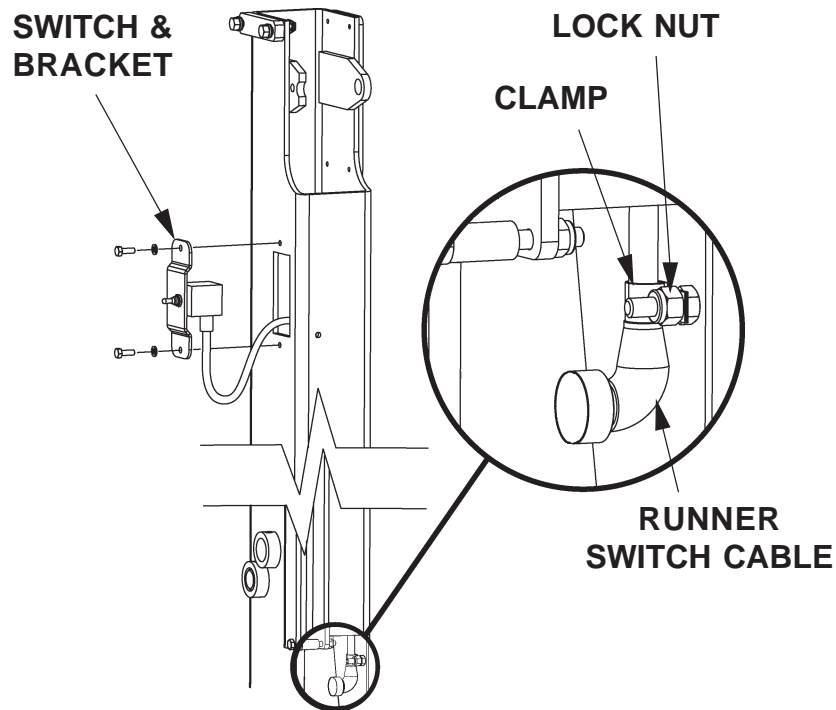


FIG. 11

13. If RH Runner is being replaced, re-install Runner Switch, Bracket, and Cable in runner as follows. Make a wire fish by feeding 8 feet of small guage wire through upper switch hole in Runner (**FIG. 11**). Pull wire through channel at lower end of Column. Leave enough wire at upper hole to attach to Switch Cable, and leave enough wire to pull at the lower end of Runner. Tie upper end of wire fish to Runner Switch Cable connector . Pull connector with cable through Runner until connector exits lower end of column. Bolt Switch Mounting Bracket to Runner with (2) bolts and (2) lock washers (**FIG. 11**). Re-install clamp and lock nut holding Runner Switch Cable to Column (**FIG. 11**).
14. If RH Runner is being replaced, do the **CLOSING CYLINDER REPLACEMENT** procedure in this section to remove and re-install Closing Cylinder.

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15. To install replacement Runner, grasp upper end of Runner and place it in Column as shown in **FIG. 12A**. Grasp lower end of Runner and push it in correct position in the Column.

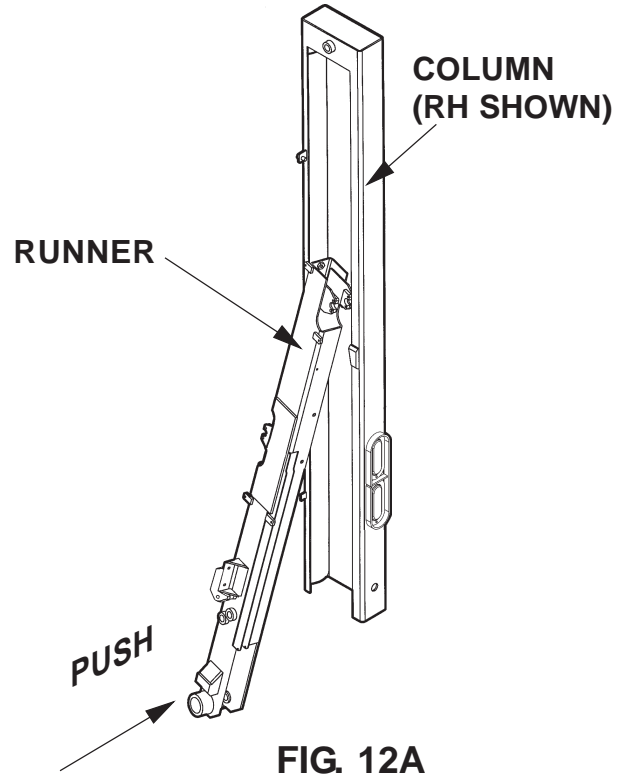


FIG. 12A

16. Place Tandem Assembly in replacement Runner as shown in **FIG. 12B**. Reinstall the Anchor Pin (**FIG. 12C**) that holds Tandem Assembly to Runner. Bolt the Anchor Pin to runner and tighten bolt (**FIG. 12C**).

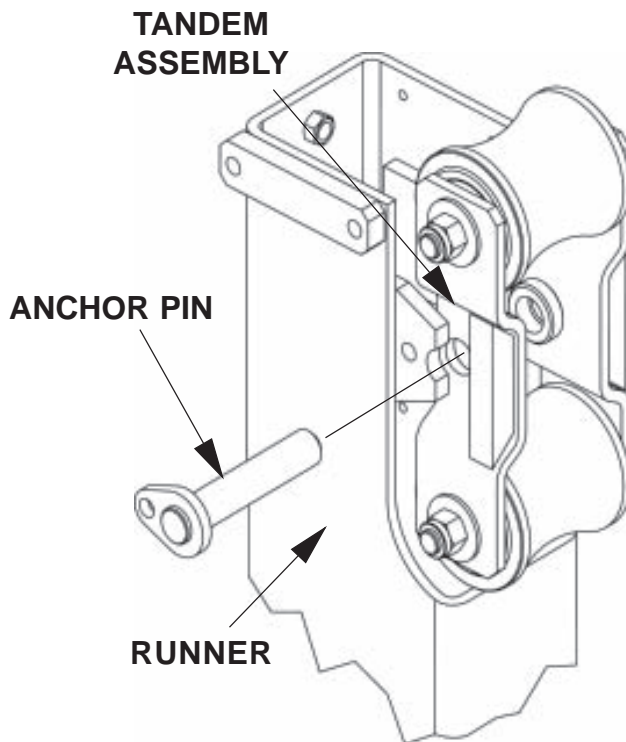


FIG. 12B

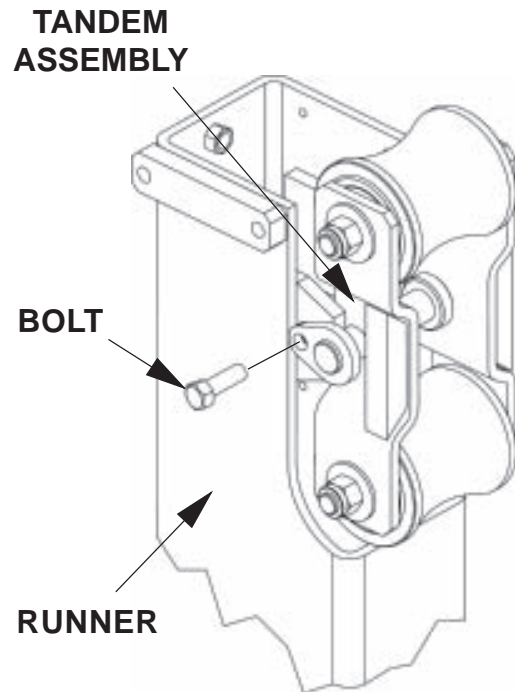
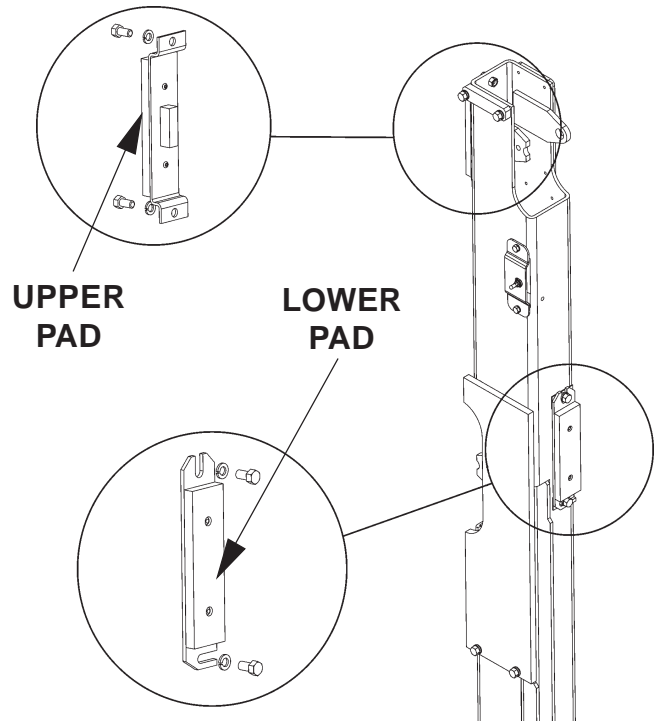


FIG. 12C

RUNNER REPLACEMENT - Continued

17. Re-install or replace the Upper and Lower Pads on the front and back of the Runner (**FIG. 13A**). Use (2) hex head bolts and (2) lock washers to bolt each pad to Runner.



18. Install Lifting Cylinder in Column by doing Lifting Cylinder replacement steps in the **LIFTING CYLINDER REPLACEMENT** procedure in this section.

NOTE: If replacing LH Runner, skip Steps 19, 20 and 21.

CAUTION

Make sure electrical cable is not wrapped around hydraulic hose.

19. Place Spring Guard, Flexible Cable (with Adapter), and Hydraulic Hose in channel at bottom of Runner (**FIG. 13B**).

20. Re-connect Hydraulic Hose to Closing Cylinder (**FIG. 13B**).

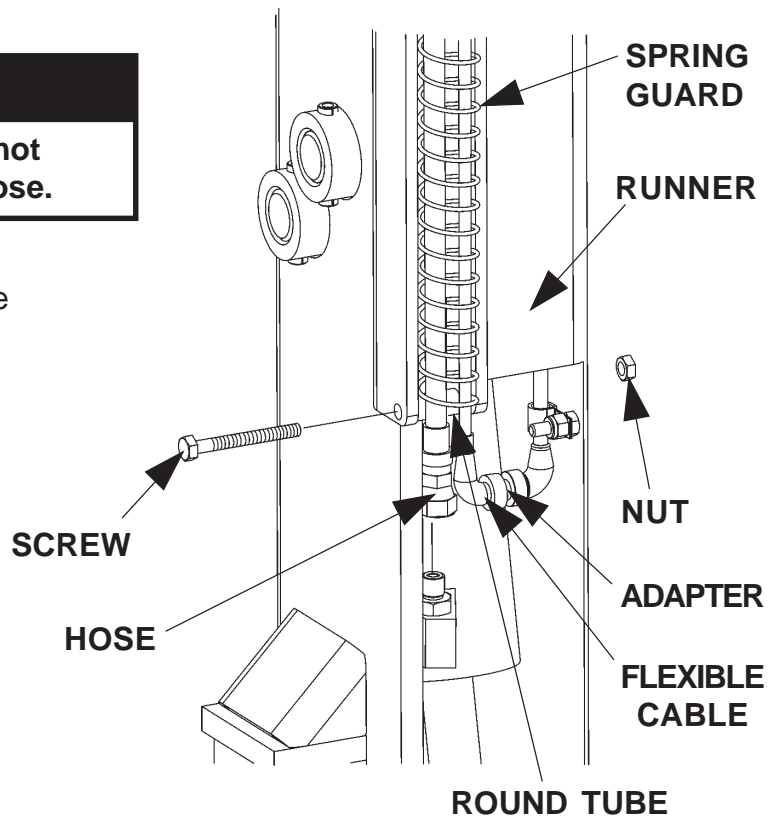


FIG. 13B

21. Re-connect Runner Switch Cable connector to Flexible Cable connector and Adapter at bottom of Runner (**FIG. 14A**).

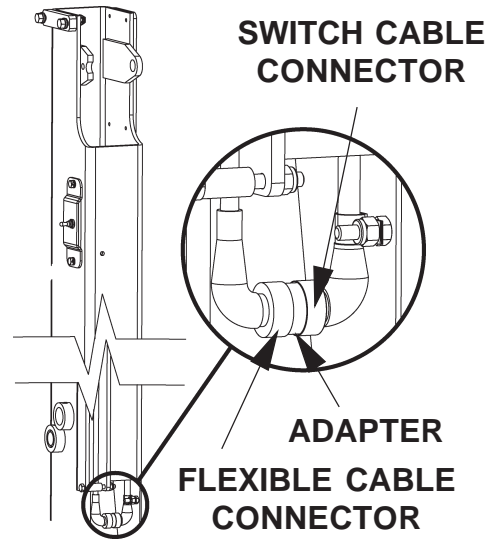


FIG. 14A

22. Use a forklift or equivalent lifting device to lift Platform and line it up with attaching points on the LH and RH Runners .

23. Re-install the Bolts and Pins (**FIG. 14B**) holding Platform and Connector Bar to LH and RH Runners.

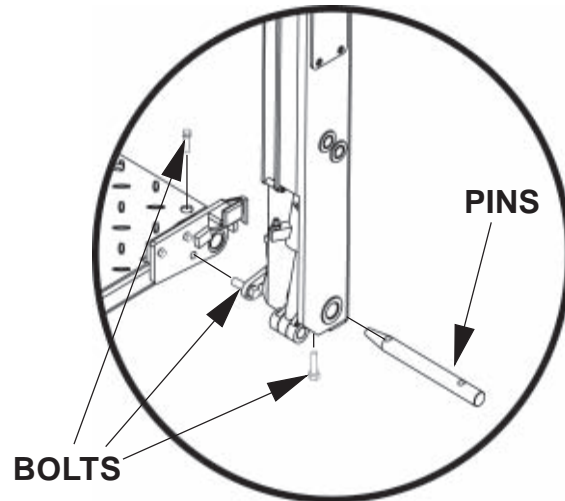


FIG. 14B

NOTE: Re-install Runner Cover, with “ALIGN ARROWS” Decal, on LH Runner.

24. Bolt on Runner Cover (**FIG. 14C**). Use Pin and Cotter Pin to re-attach Chain Arm Assembly to Runner (**FIG. 14C**). If Liftgate is equipped with CS Platform, use Pin and Roll Pin to re-attach Railing to Runner (**FIG. 14C**).

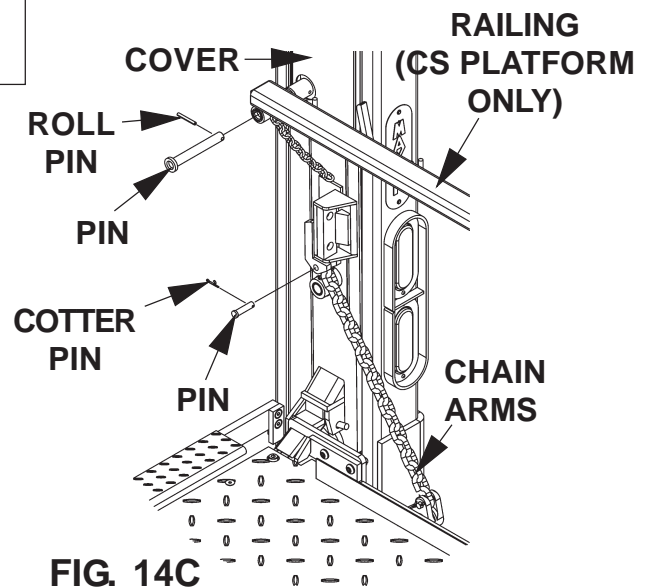


FIG. 14C

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ADJUSTMENTS

SINGLE PUMP, MAIN SYSTEM FOLD PRESSURE ADJUSTMENT

The Pump pressure is set at the factory; however, if adjustment is needed use the following procedure.

1. Open the Platform. Turn Closer Valve Adjustment (**FIG. 1B**) all the way clockwise. Disconnect hose from Folding Port bulkhead fitting and connect 0-3000 PSI gauge to hose (**FIG. 1A**).
2. Remove plug (covering Pump Pressure Relief Valve) from Pump Block (**FIG. 1B**). Set Liftgate Control Box to **FOLD**. Turn the Pump Pressure Relief Valve (**FIG. 1B**) to obtain proper Pump pressure setting of **2750 PSI**. Re-install plug.
3. Disconnect 0-3000 PSI gauge from hose (**FIG. 1A**) and re-connect hose to Folding Port bulkhead fitting.
4. Reset the Closer Valve Adjustment (**FIG. 1B**) to obtain Platform closing speed cycle of 4-6 seconds.

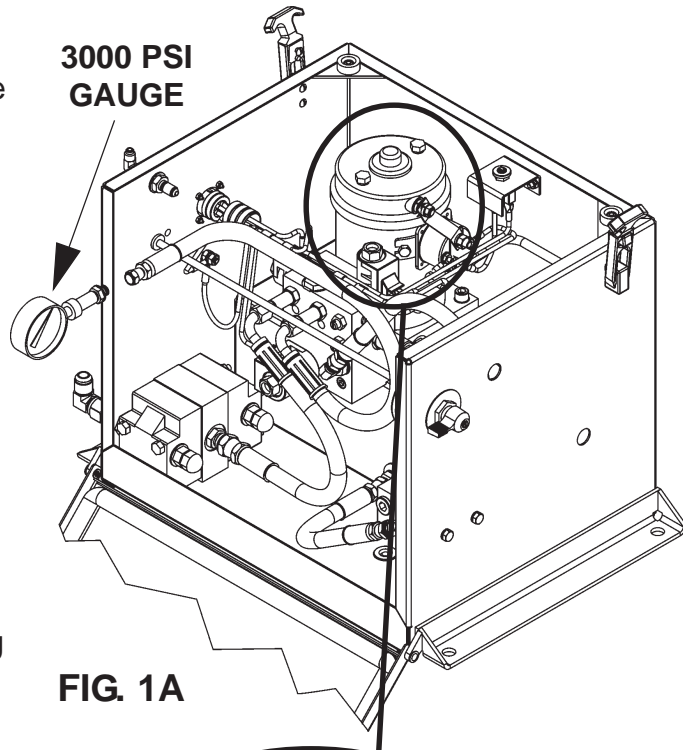


FIG. 1A

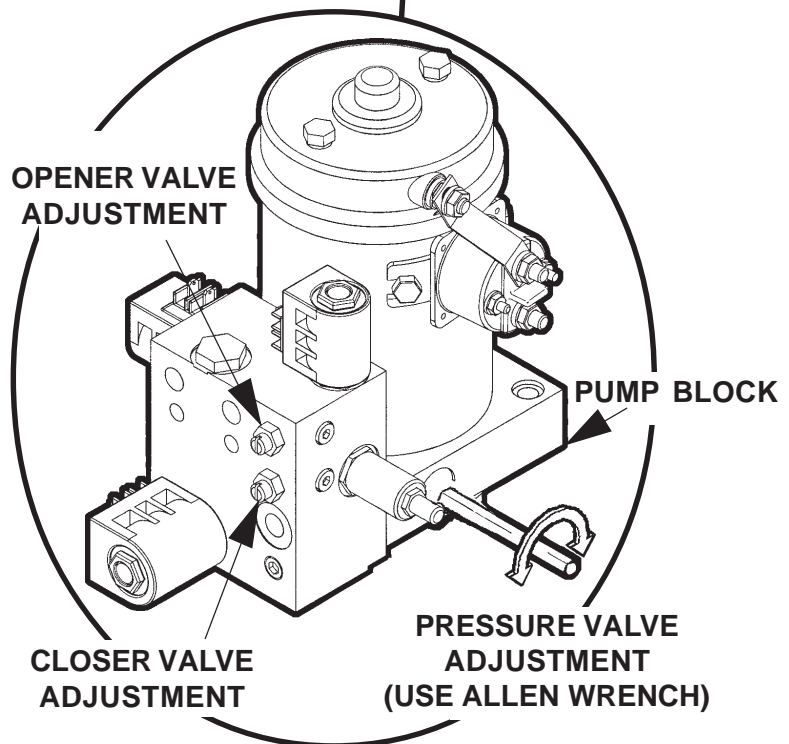


FIG. 1B

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DUAL PUMP, MAIN SYSTEM FOLD PRESSURE ADJUSTMENT

The Dual Pump pressure is set at the factory; however, if adjustment is needed use the following procedure.

1. Open the Platform. Turn Closer Valve Adjustment (**FIG. 2B**) all the way clockwise on both pumps. Disconnect hose from Folding Port bulkhead fitting and connect 0-3000 PSI gauge to hose (**FIG. 2A**). Use Pump Select Switch (**FIG. 2A**) to select first Pump for adjustment.

2. Remove plug (covering Pump Pressure Relief Valve) from Pump Block (**FIG. 2B**). Set Liftgate Control Box to **FOLD**. Turn the Pump Pressure Relief Valve (**FIG. 2B**) to obtain proper Pump pressure setting of **2750 PSI** on Pump 1. Re-install plug on Pump 1. Select Pump 2 and repeat this step.

3. Once Pump 1 is set, select Pump 2 with Pump Select Switch (**FIG. 2A**). Repeat **Steps 1 and 2** for Pump 2.

4. Disconnect 0-3000 PSI gauge from hose (**FIG. 2A**) and re-connect hose to Folding Port bulkhead fitting.

5. Reset the Closer Valve Adjustment (**FIG. 2B**) for Pump 2 to obtain Platform closing speed cycle of 4-6 seconds. Select Pump 1 and repeat this step.

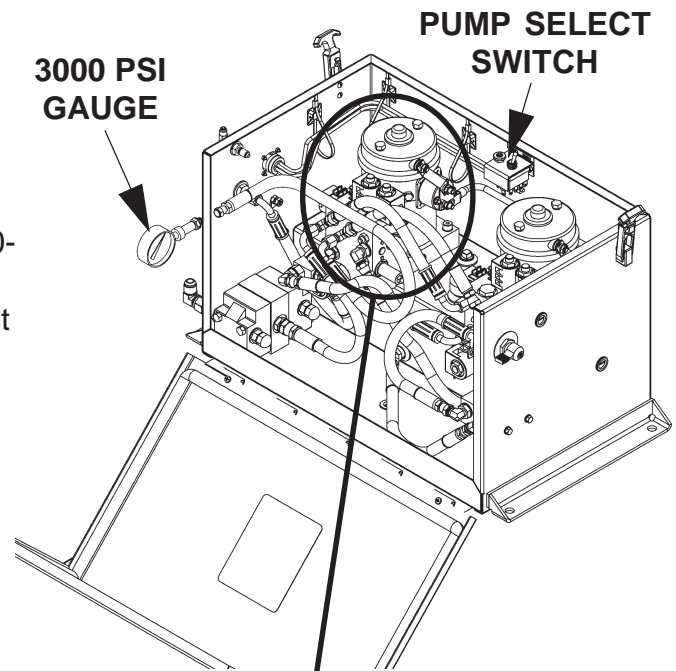


FIG. 2A

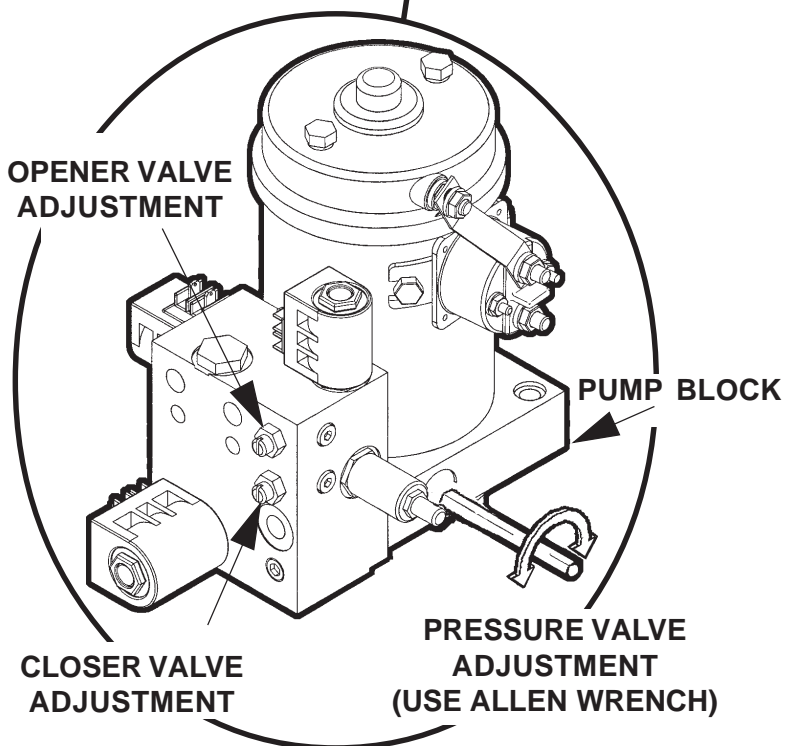
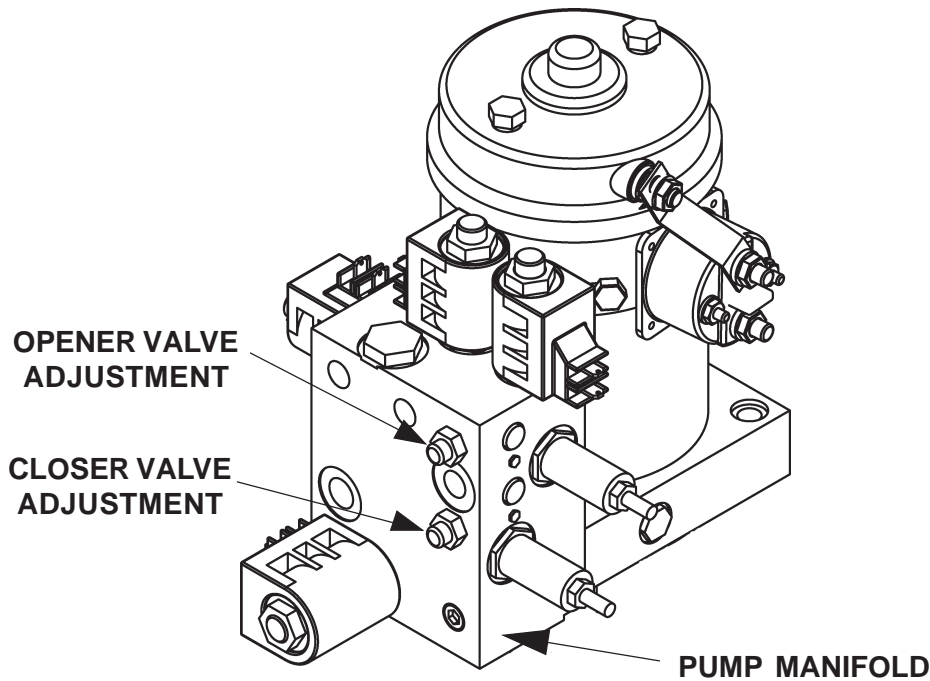


FIG. 2B

PLATFORM FOLDING SPEED ADJUSTMENT

1. The speed settings for the Closing Cylinder are regulated by the Pressure Relief Needle Valves located on the Pump Manifold (**FIG. 3**). One Valve is marked "O" (Open Platform) and the other is marked "C" (Close Platform).
2. To decrease Platform opening speed, turn Opener Valve Adjustment (**FIG. 3**) clockwise. Increase Platform opening speed by turning Opener Valve Adjustment (**FIG. 3**) counter-clockwise.
3. To increase Platform closing speed, turn Closer Valve Adjustment (**FIG. 3**) clockwise. Decrease Platform closing speed by turning Closer Valve Adjustment (**FIG. 3**) counter-clockwise.



TYPICAL PUMP OPENER AND
CLOSER ADJUSTMENTS
(POWER DOWN VERSION SHOWN)

FIG. 3

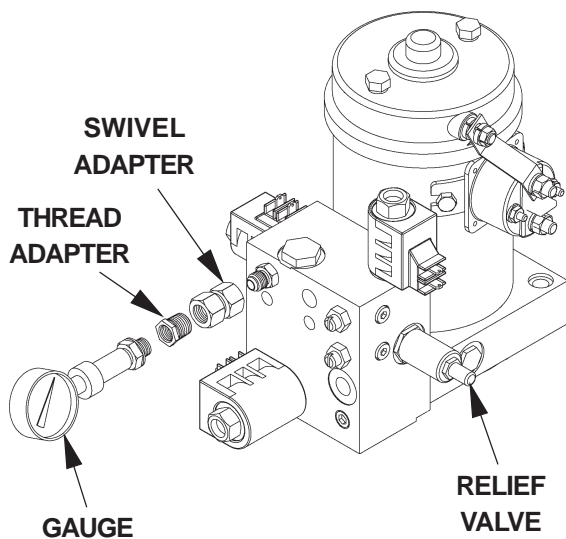
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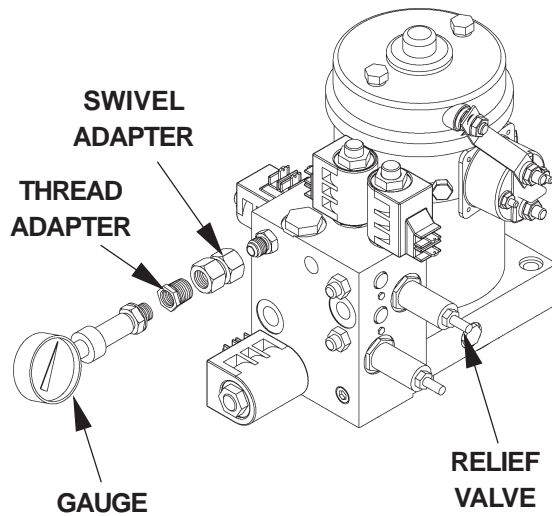
RELIEF VALVE PRESSURE ADJUSTMENT

NOTES: The Relief Valve pressure is set at the factory; however, if adjustment is needed, use the following procedure to set the pressure. At first, adjust pressure to **2100 PSI**. Then slowly adjust pressure up to correct reading.

1. Attach a 0-3000 PSI gauge, with thread adapter and swivel adapter, to Pump Pressure Port as shown in **FIG. 4A** and **FIG. 4B**. Use **UP/DOWN** toggle switch in **UP** position to run Pump Motor. Turn the Relief Valve to **2400 PSI**.



**GRAVITY DOWN PUMP/MOTOR
FIG. 4A**



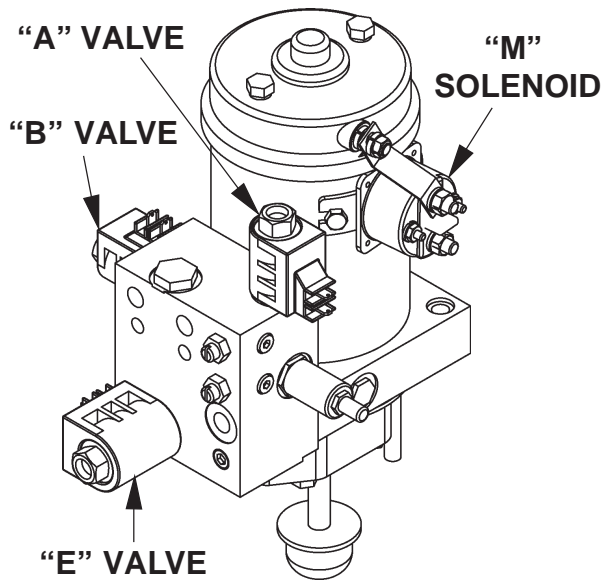
**POWER DOWN PUMP/MOTOR
FIG. 4B**

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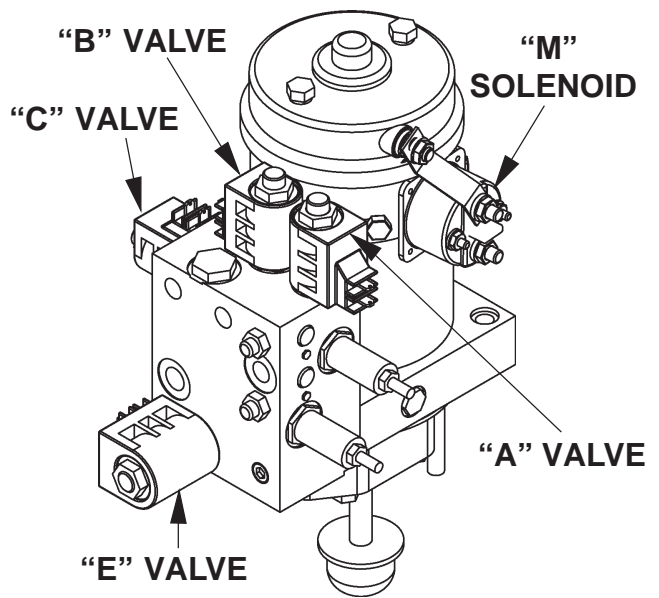
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HYDRAULIC SYSTEM DIAGRAMS

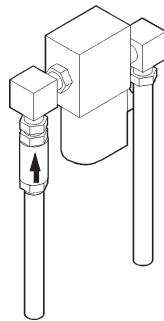
PUMP & MOTOR SOLENOID OPERATION



GRAVITY DOWN PUMP/MOTOR
FIG. 1



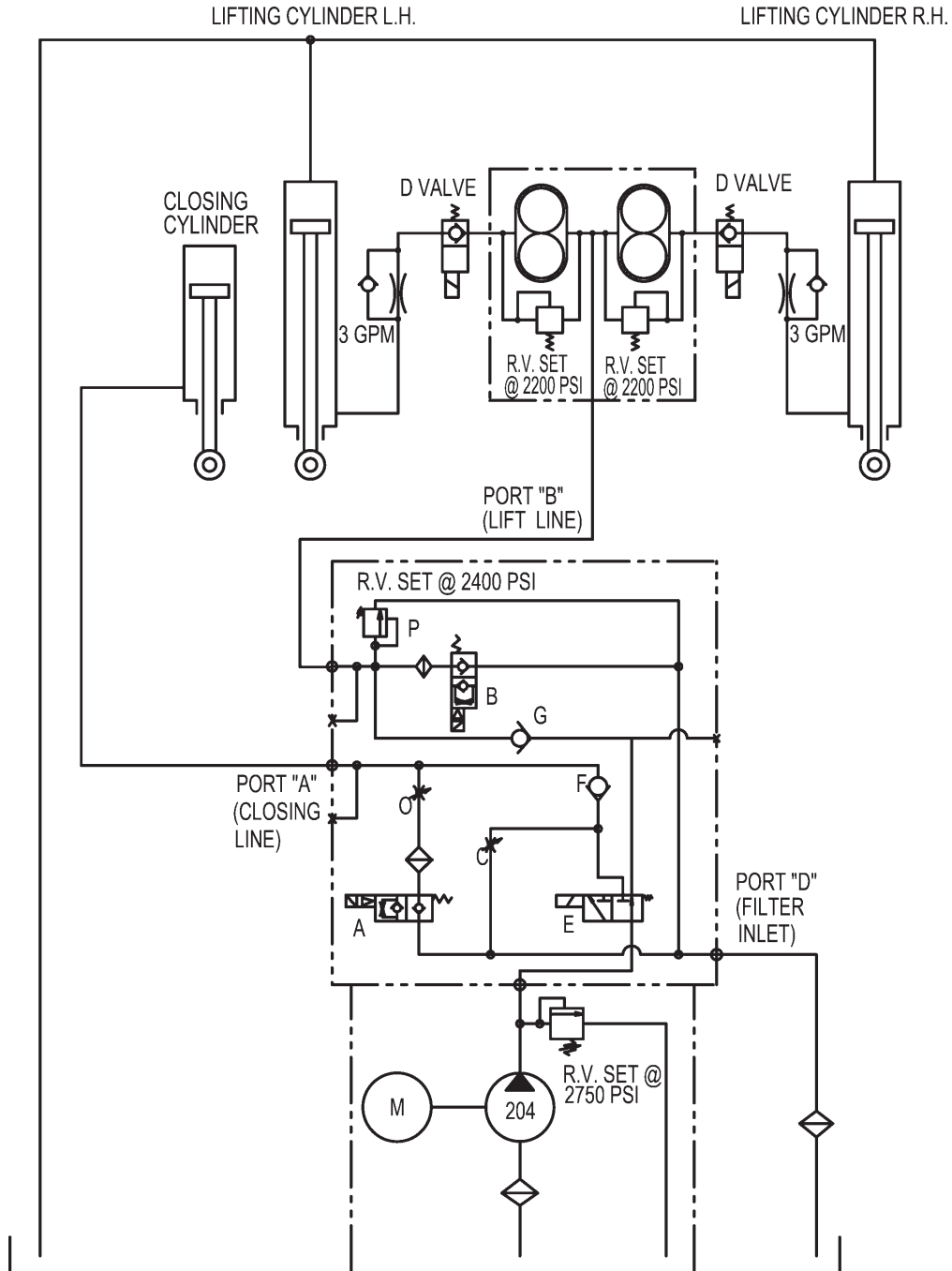
POWER DOWN PUMP/MOTOR
FIG. 2



"D" VALVES (TOP OF EACH COLUMN)
FIG. 3

SOLENOID OPERATION		
FUNCTION	SOLENOID ENERGIZED	ACTION
UP	M	Motor runs; Oil flows from "B" Port, thru Flow Divider, thru "D" Valves to Lift Cylinders.
DOWN	GRAVITY - B & D (FIG. 1 & 3)	"B & D" Valves open, allowing oil to return from Lift Cylinders to the Reservoir
	POWER - M,B,C,& D (FIG. 2 & 3)	Motor runs; "B,C,& D" Valves open, allowing oil to return from Lift Cylinders to Reservoir.
FOLD PLATFORM	M & E	Motor runs; "E" Valve shifts, Oil flows from Port "A" to the Folding Cylinder.
UNFOLD PLATFORM	A	"A" Valve opens, allowing oil to return from the Folding Cylinder to Reservoir.

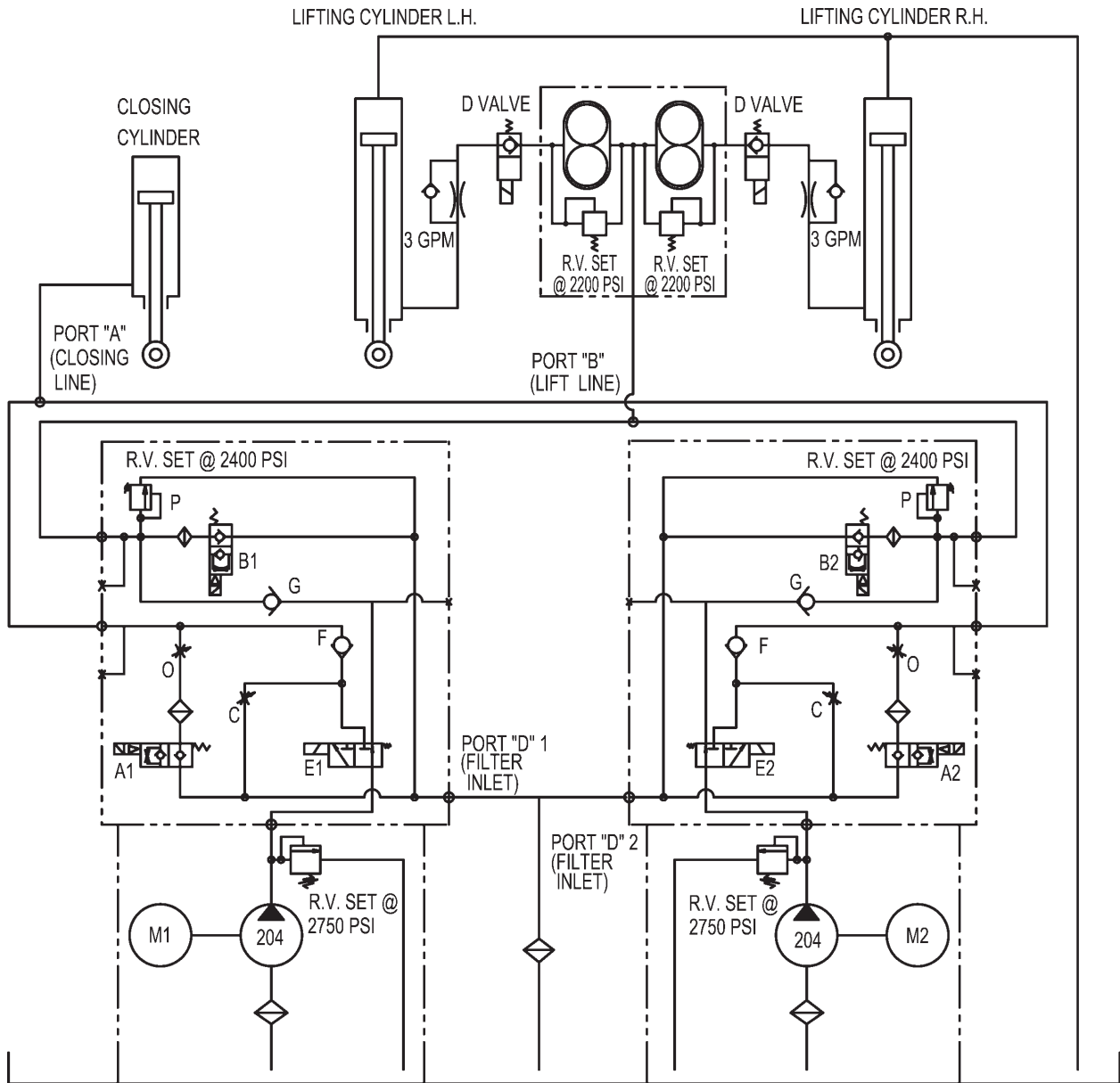
HYDRAULIC SCHEMATIC, SINGLE PUMP GRAVITY DOWN



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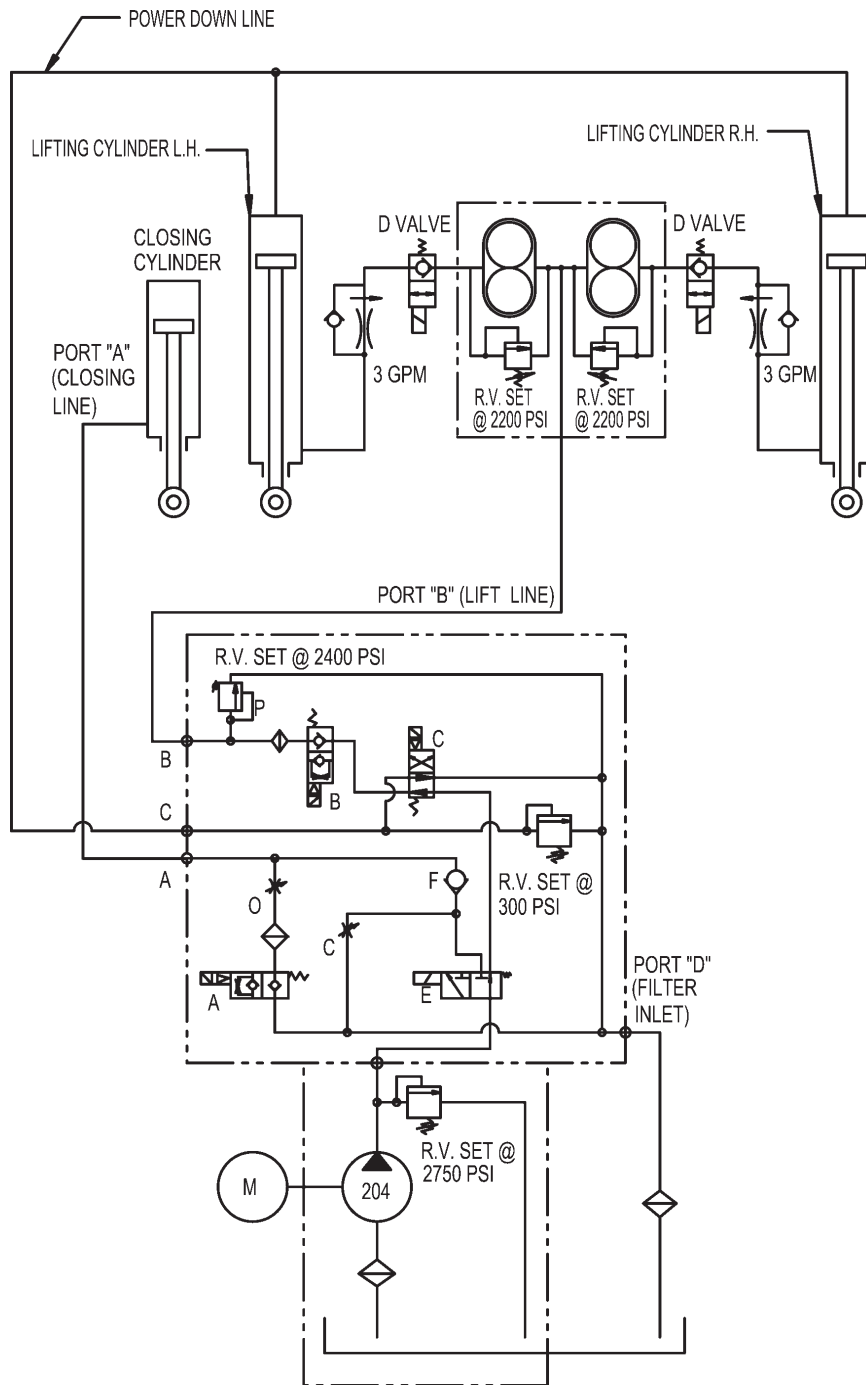
HYDRAULIC SCHEMATIC, DUAL PUMP GRAVITY DOWN



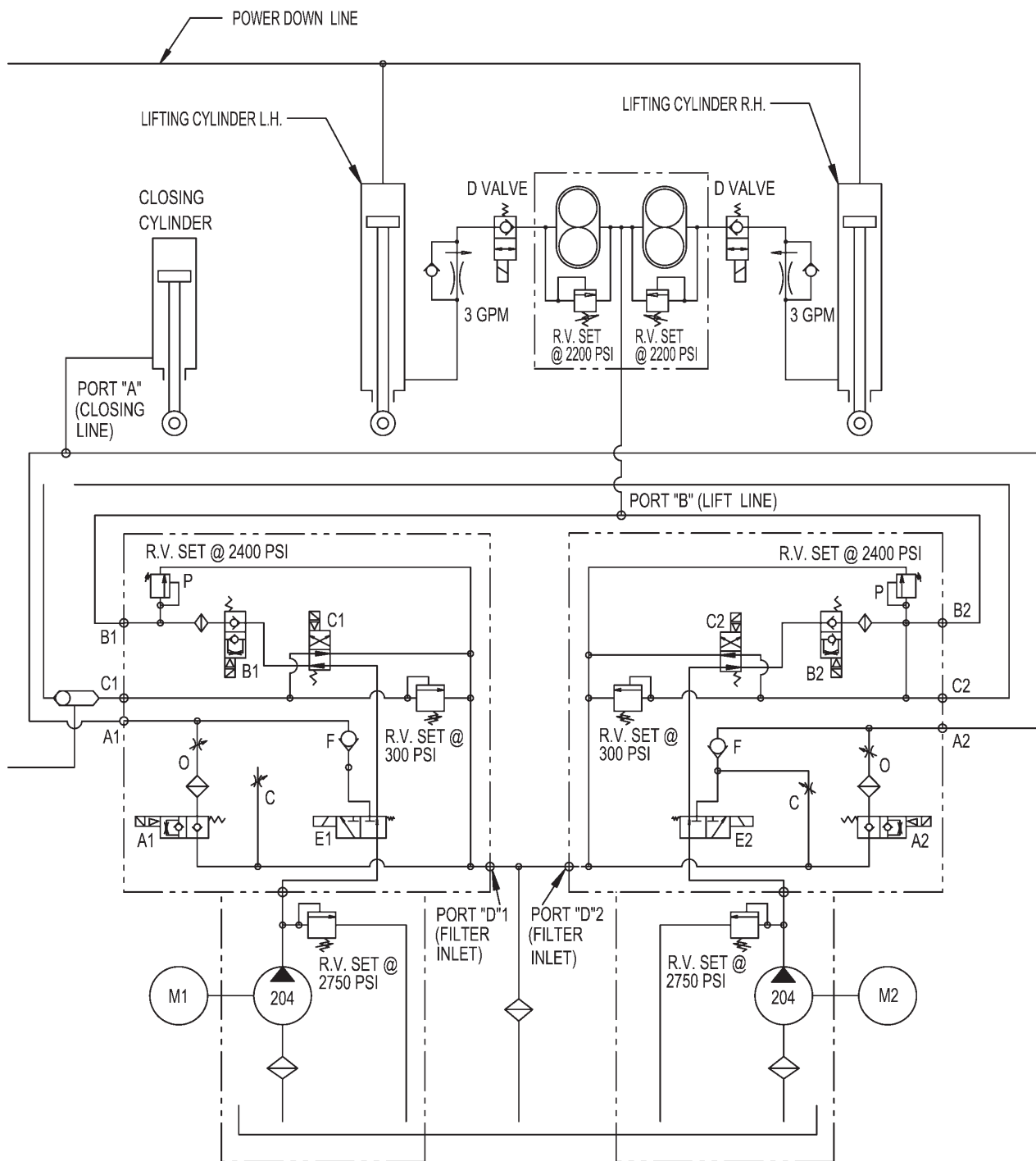
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HYDRAULIC SCHEMATIC, SINGLE PUMP POWER DOWN

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HYDRAULIC SCHEMATIC, DUAL PUMP POWER DOWN

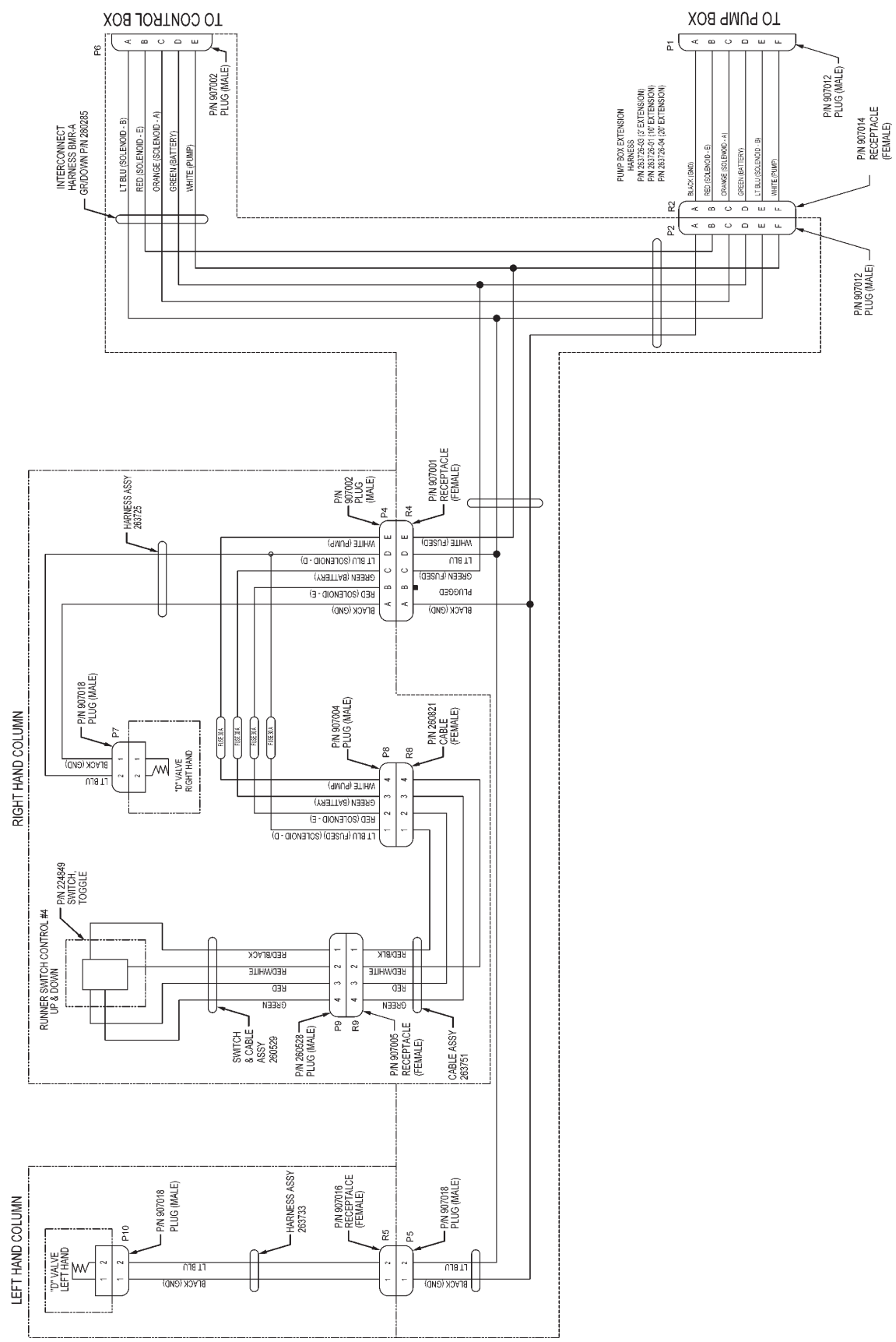


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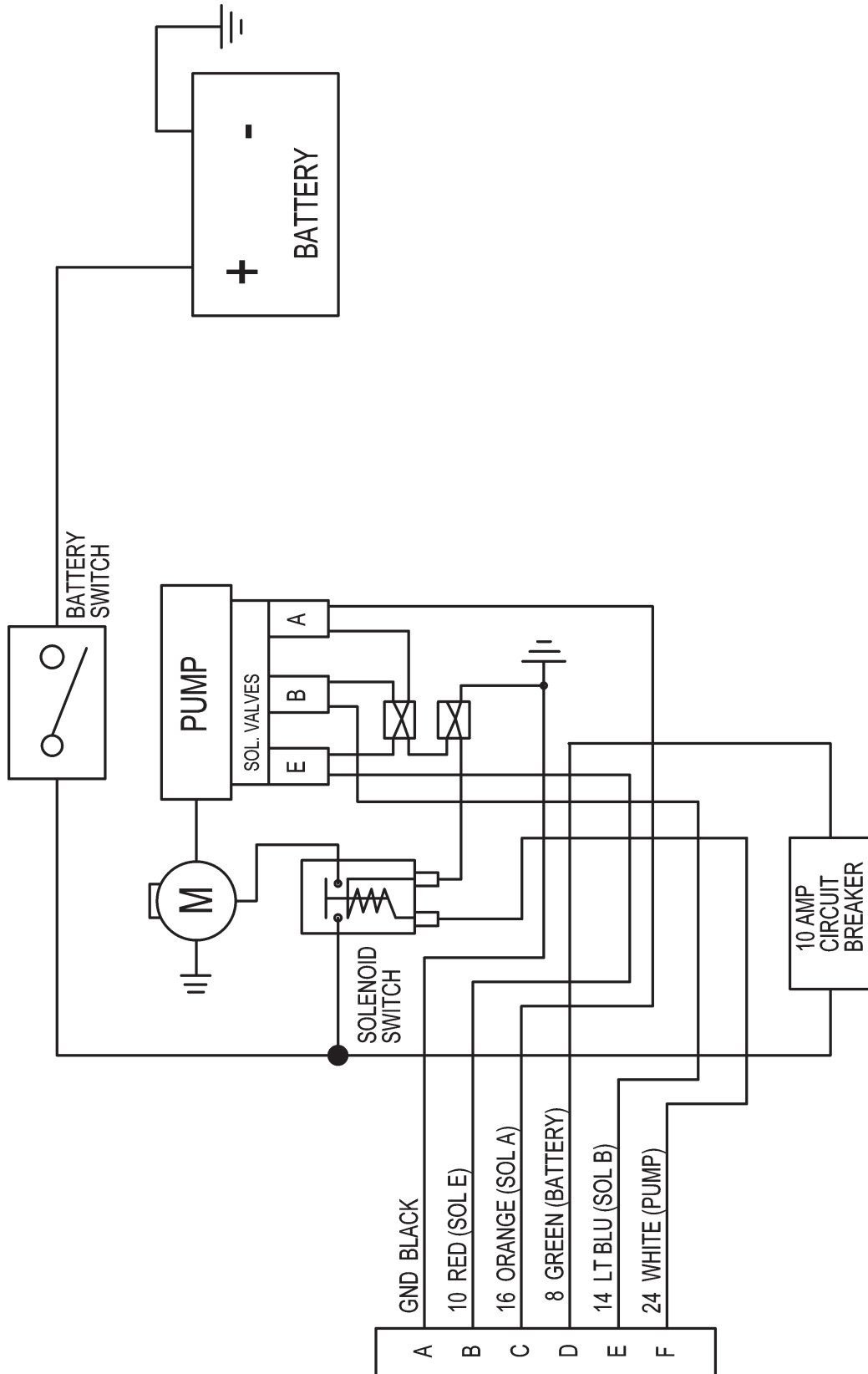
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ELECTRICAL SCHEMATICS

WIRING SCHEMATIC, GRAVITY DOWN



SINGLE PUMP BOX, GRAVITY DOWN

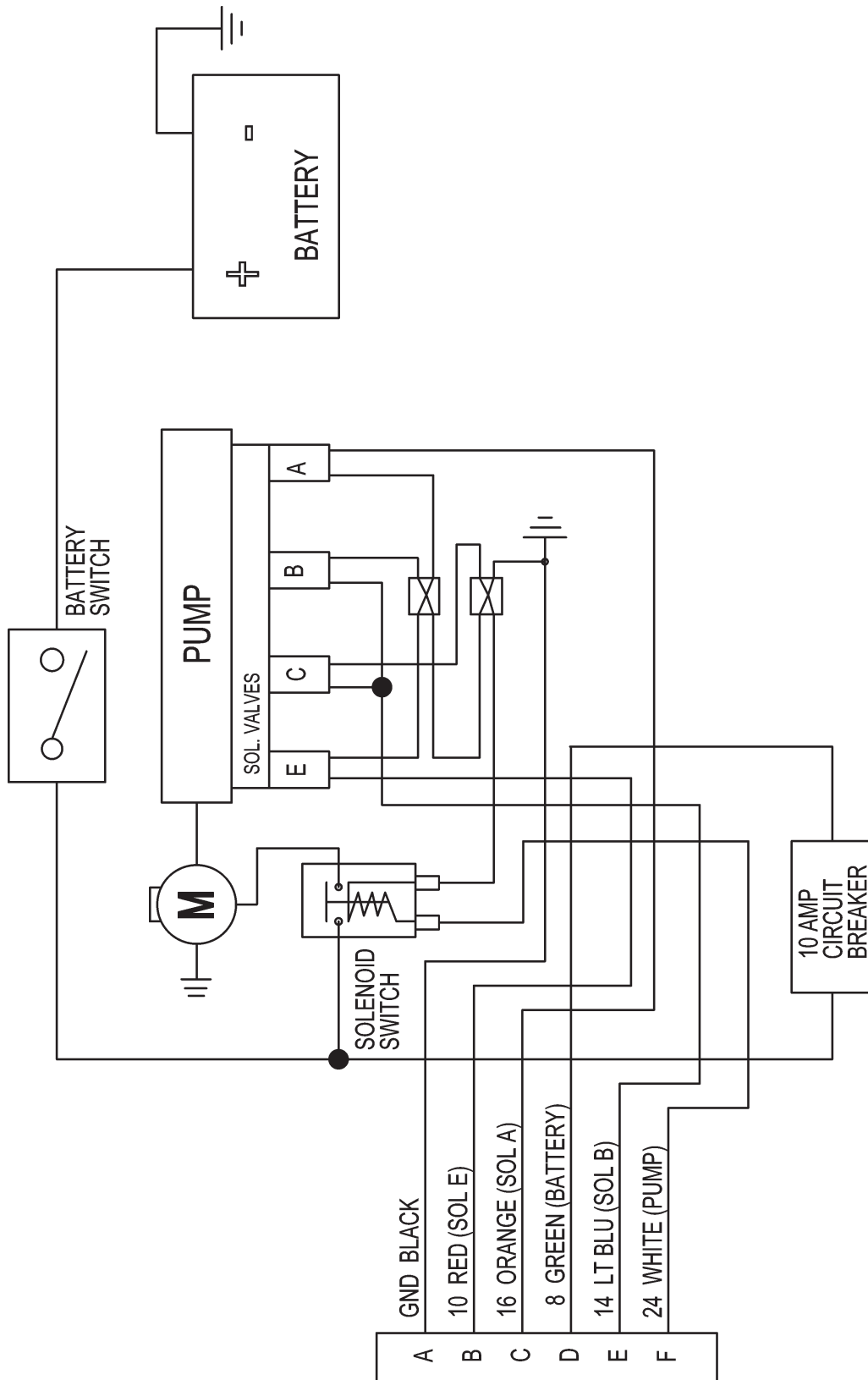


From Receptacle on pump box wall

SINGLE PUMP BOX, POWER DOWN

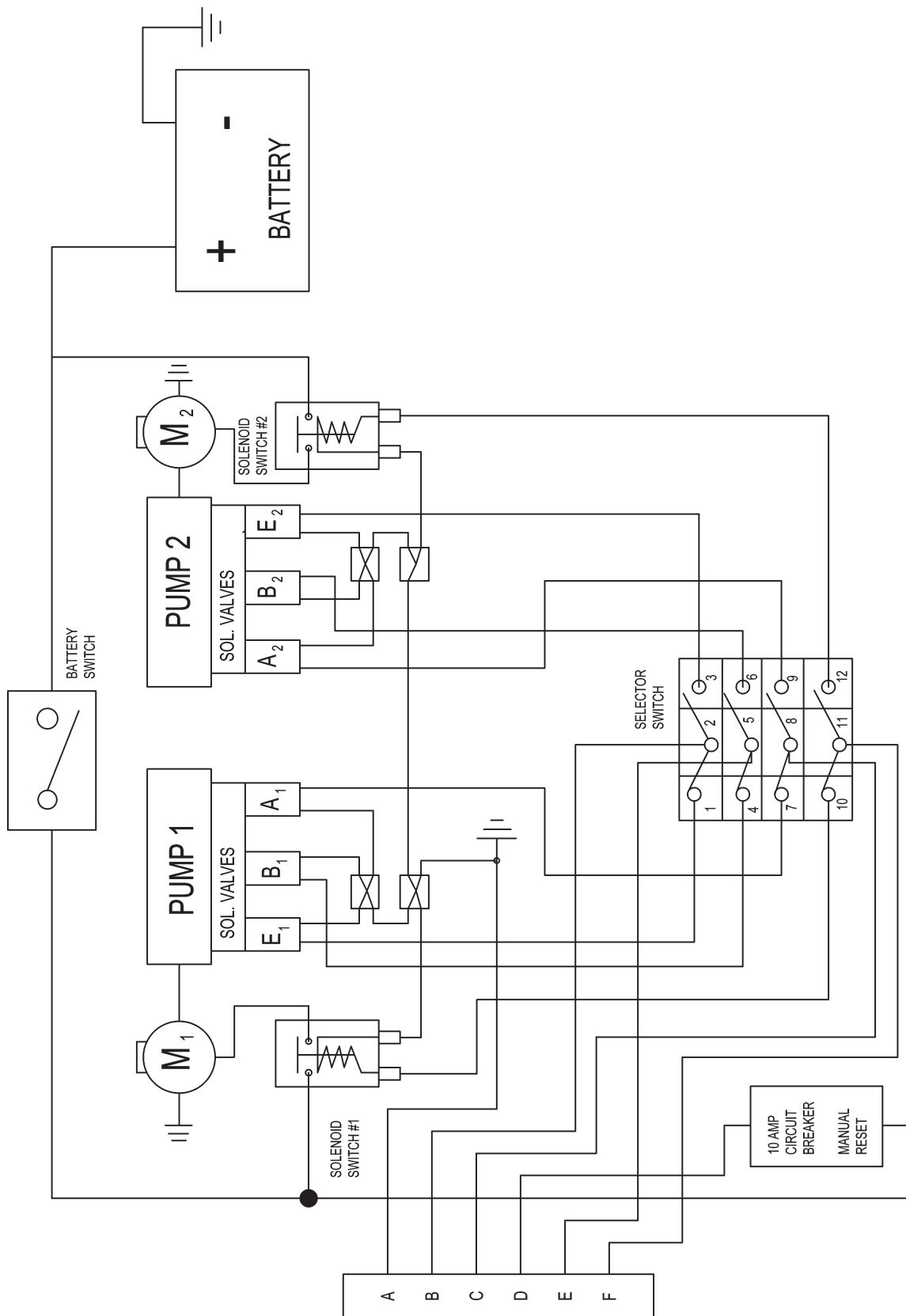
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From Receptacle on pump box wall

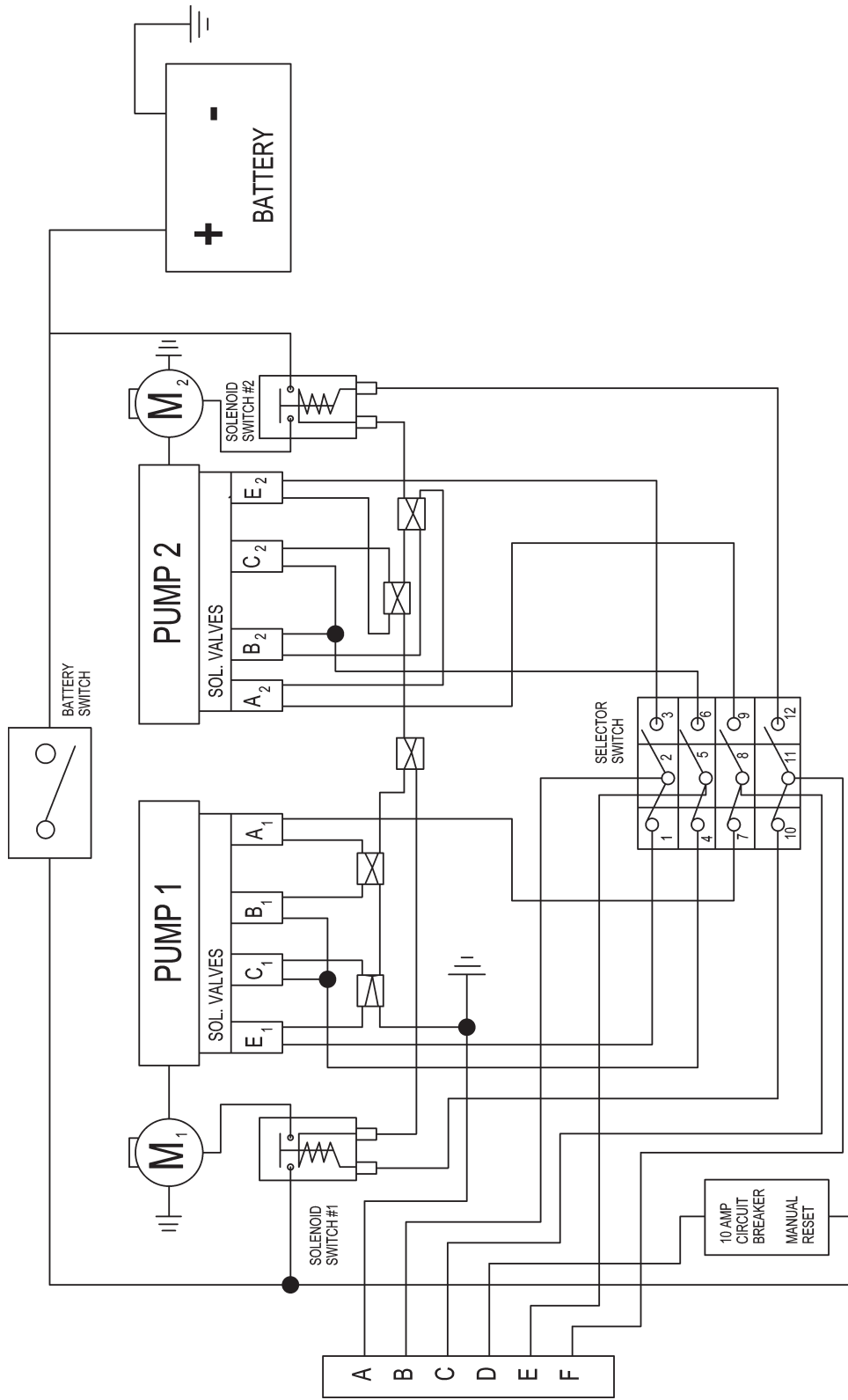
DUAL PUMP BOX, GRAVITY DOWN



From Receptacle on pump box wall

DUAL PUMP BOX, POWER DOWN

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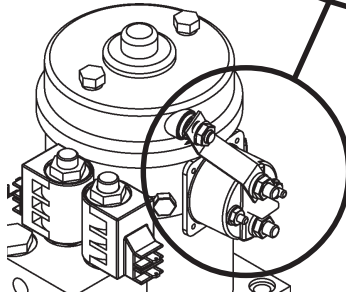
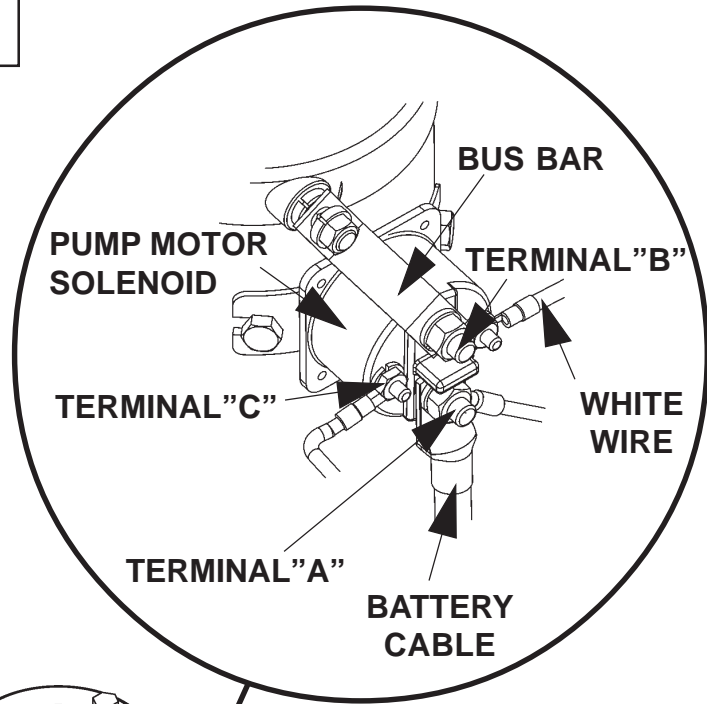
From Receptacle on pump box wall

TROUBLESHOOTING

PLATFORM WILL NOT RAISE, MOTOR WILL NOT RUN

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

1. Check for 12.6 Volts DC input to Motor Solenoid by using voltmeter between Terminal A (**FIG. 1**) and ground. If there is no power to the Motor Solenoid, make sure Pump Box Master Disconnect Switch is **ON** and Circuit Breaker is set.
2. Find out if vehicle is equipped with Optional Battery Box, Truck Charge Line, Tractor Charge Line, or Trailer Charge Line. Check Optional Battery Box Cables and Charge Line Cables for damage, dirty connections and loose connections. Replace damaged Battery Cables, clean dirty connections, and tighten loose connections.



**TYPICAL PUMP MOTOR SOLENOID
FIG. 1**

3. Check if vehicle batteries and Optional Battery Box batteries are fully charged. If required, fully charge batteries with a battery charger. Replace batteries that cannot be fully charged. If battery charger fully charges batteries, use vehicle manufacturer's specifications to check the vehicle battery charging system. Do not operate Liftgate if vehicle charging system needs repair.
4. Use a 6" long, 10 gauge insulated wire as a jumper to connect Pump Motor Solenoid Terminal A and Terminal C. Check for 12.6 Volts DC output from Motor Solenoid by using voltmeter between Terminal B (**FIG. 1**) and ground. If a low voltage or 0 volts is indicated on Terminal B, replace Motor Solenoid. Also, check Bus Bar for damage, dirty connections, and loose connections. Replace damaged Bus Bar, clean dirty connections, and tighten loose connections. Use multimeter and applicable schematics in this manual to check Switch Controls and interconnecting wiring

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PLATFORM WILL NOT PICK UP RATED CAPACITY

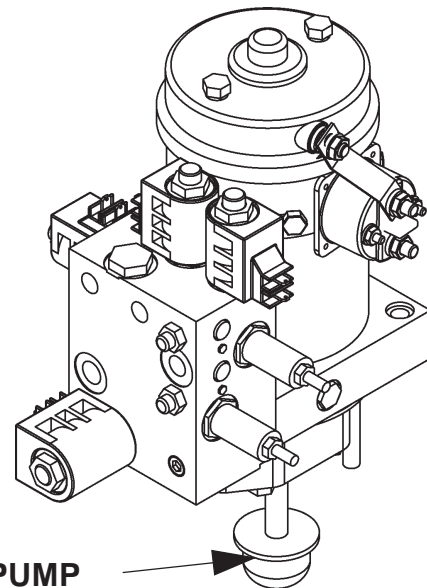
1. Check for unequal Cylinder operation (lagging cylinder first).
 - **GRAVITY DOWN LIFTGATES:** Lower the Platform to the ground. Disconnect the RETURN HOSE at the bottom of each Column. Place a large container under Cylinder to catch fluid. Set Control Box toggle switch to **UP** position to raise Platform. Check if fluid is streaming from the fitting. A few drops of hydraulic fluid is okay; however, if fluid streams steadily from the fitting, replace Piston Seals.
 - **POWER DOWN LIFTGATES:** Raise the Platform to bed height. Disconnect both bottom **POWER DOWN RETURN HOSES** at the “T” connector between Pump Box and bottom of each Cylinder. Place a large container to catch fluid from both hoses. Set Control Box toggle switch to **UP** position to raise Platform. Check if fluid is streaming from the hoses. A few drops of hydraulic fluid is okay; however, if fluid streams steadily from a hose, replace Piston Seals in the Cylinder connected to that hose.
2. Check vehicle Charge Line cables for damage, dirty connections and loose connections. If Liftgate Battery Box is installed, check for damaged Battery Cables, dirty cable connections and loose cable connections in Battery Box. Replace damaged cables, clean dirty connections and tighten loose connections.
3. Check for bent parts on the Liftgate that could interfere with normal operation.

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

4. Verify that Relief Valve Pressure Settings are correct. Refer to Relief Valve Pressure Setting procedure. If pressure settings can't be corrected or if Pump runs hot and excessively noisy, replace Pump.

NOTE: Do the **REMOVING AIR FROM HYDRAULIC LINES** procedure in this manual with the following step.

5. Remove Pump/Motor Assembly from reservoir (**FIG. 2**). Check if Pump Filter is clogged. Clean clogged filter and flush contaminated fluid from reservoir. Replace spin-on filter in Pump Box. Re-install Pump/Motor Assembly.



TYPICAL PUMP/MOTOR REMOVED TO CHECK AND CLEAN FILTER (POWER DOWN VERSION SHOWN)

FIG. 2

PLATFORM RAISES HALFWAY & STOPS

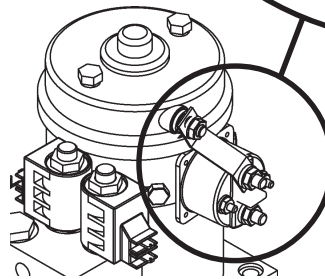
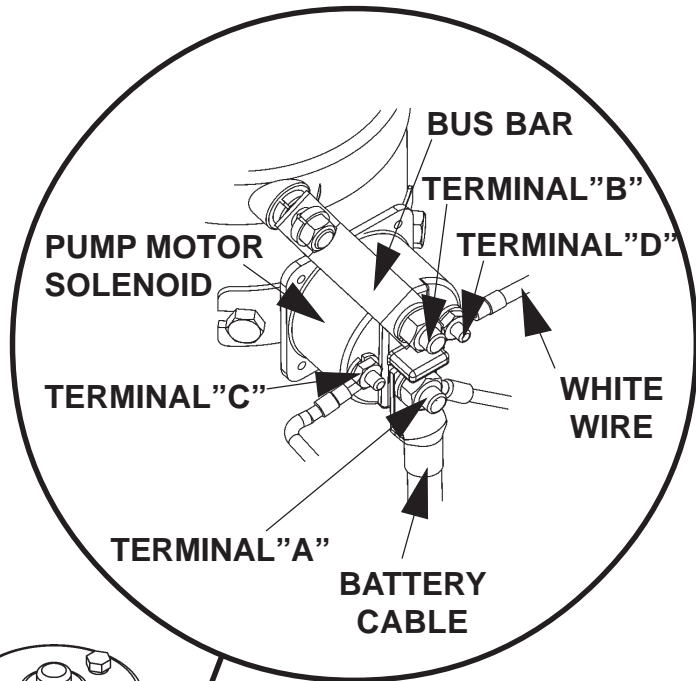
1. Check the hydraulic fluid level in the Reservoir.

GRAVITY DOWN LIFTGATES: Lower the Platform to the ground. Clean dirt and fluid from top of Reservoir in Pump Box. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

POWER DOWN LIFTGATES: Raise the Platform to bed height. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

2. Find out if vehicle is equipped with Optional Battery Box, Truck Charge Line, Tractor Charge Line, or Trailer Charge Line. Check Optional Battery Box Cables and Charge Line Cables for damage, dirty connections and loose connections. Replace damaged Battery Cables, clean dirty connections, and tighten loose connections.

3. Check if vehicle batteries and Optional Battery Box batteries are fully charged. If required, fully charge batteries with a battery charger. Replace batteries that cannot fully charge. If battery charger fully charges batteries, use vehicle manufacturer's specifications to check the vehicle battery charging system. Do not operate Liftgate if vehicle charging system needs repair.



**TYPICAL PUMP MOTOR SOLENOID
FIG. 3**

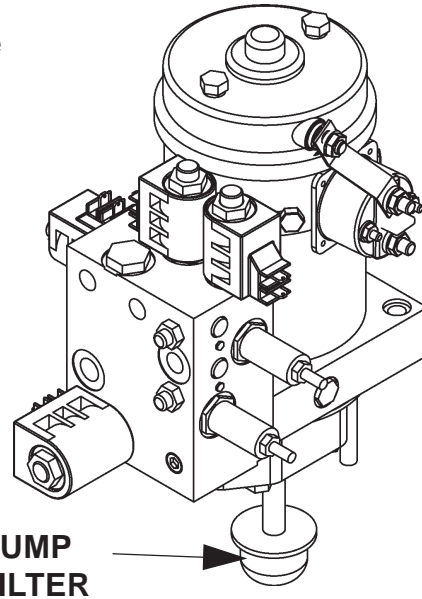
NOTE: For Dual Pump system, check Secondary Pump and Motor first.

4. Check Pump Motor Solenoid (**FIG. 3**) and Bus Bar connections in Pump Box. Make sure Bus Bar connections are clean and tight. Use a 6" long, 10 gauge insulated wire as a jumper between Motor Solenoid Terminals "C" and "D" to activate Solenoid. Replace Solenoid if it fails to activate.

5. Check for bent parts on the Liftgate that could interfere with normal operation.

NOTE: Do the **REMOVING AIR FROM HYDRAULIC LINES** procedure in this manual with the following step.

6. Remove assembled Pump and Motor from reservoir (**FIG. 4A**). Check if Pump Filter is clogged. Clean clogged filter and flush contaminated fluid from reservoir. Replace spin-on filter in Pump Box.



TYPICAL PUMP/MOTOR REMOVED TO CHECK AND CLEAN FILTER (POWER DOWN VERSION SHOWN)

FIG. 4A

7. If Pump runs hot and extremely noisy, replace it.

NOTE: Do the **REMOVING AIR FROM HYDRAULIC LINES** procedure in this manual with the following step.

8. Remove Pressure Compensation Valve (**FIG. 4B**) located at the top of each Column. Check if the Pressure Compensation Valves are contaminated. Disassemble, try to move plunger with small screwdriver, and then clean each valve as shown in **FIG. 4B**. Re-install or replace each Valve if necessary.

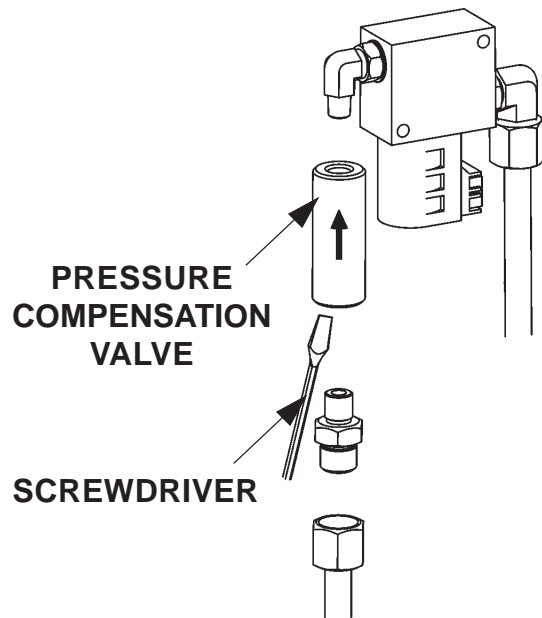


FIG. 4B

PLATFORM RAISES AND LOWERS UNEVENLY

NOTE: Do the **REMOVING AIR FROM HYDRAULIC LINES** procedure in this manual with the following step.

1. Reverse the two 3/8" high pressure hose connections on output side of Flow Divider as shown in **FIG. 5A**. Raise the Platform. If the uneven Platform position is the opposite of original symptom, replace Flow Divider.
2. Check each Lifting Hydraulic Cylinder:

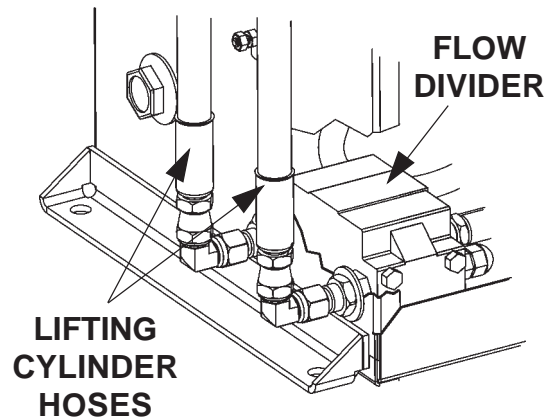


FIG. 5A

- **GRAVITY DOWN LIFTGATES:** Lower the Platform to the ground. Disconnect the RETURN HOSE from the bottom of each Cylinder. Place a large container under each Cylinder to catch fluid. Raise the Platform. Check if fluid is streaming from the fitting. A few drops of hydraulic fluid is okay; however, if fluid streams steadily from the fitting, replace Piston Seals.
- **POWER DOWN LIFTGATES:** Raise the Platform to bed height. Disconnect both bottom **POWER DOWN RETURN HOSES** at the "T" connector between Pump Box and bottom of each Cylinder. Place a large container to catch fluid from both hoses. Raise the Platform. Check if fluid is streaming from the hoses. A few drops of hydraulic fluid is okay; however, if fluid streams steadily from a hose, replace Piston Seals in the Cylinder connected to that hose.

NOTE: Do the **REMOVING AIR FROM HYDRAULIC LINES** procedure in this manual with the following step.

3. Lower the Platform to the ground and remove the Pressure Compensation Valve (**FIG. 5B**) located at the top of each Column. Check if Pressure Compensation Valves are contaminated. Disassemble, try to move plunger with small screwdriver, and then clean each valve if required (**FIG. 5B**). Re-install or replace each Valve if necessary.
4. Check for bent parts on the Liftgate that could interfere with normal operation. If Platform Hinge Pins are bent, refer to Platform Pin Adjustment Tech Alert.

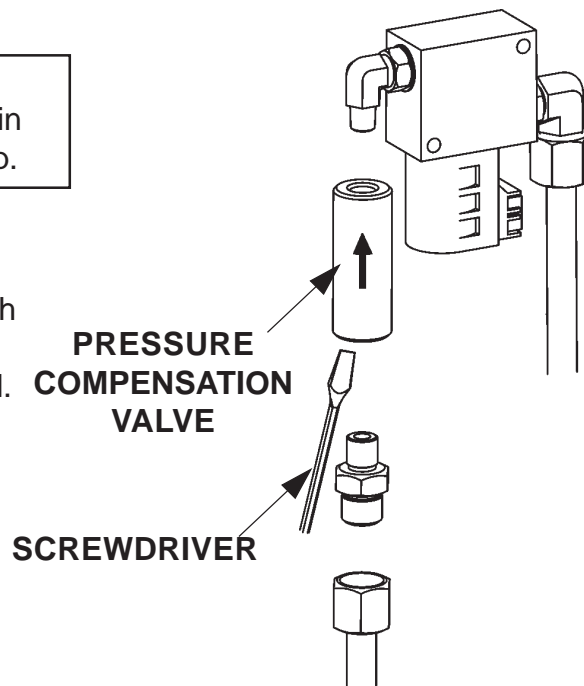


FIG. 5B

PLATFORM WILL NOT FOLD

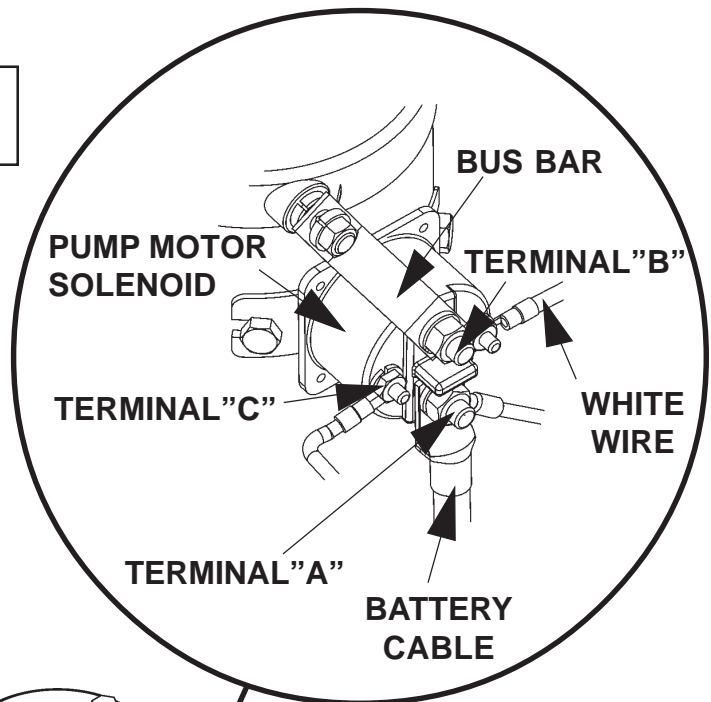
1. Check the hydraulic fluid level in the Reservoir.

GRAVITY DOWN LIFTGATES: Lower the Platform to the ground. Clean dirt and fluid from top of Reservoir in Pump Box. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

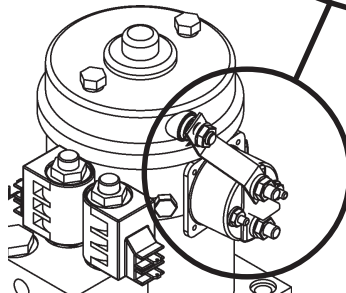
POWER DOWN LIFTGATES: Raise the Platform to bed height. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

2. Check Pump Motor Solenoid (**FIG. 6**) in Pump Box and Bus Bar connections in Pump Box. Make sure Bus Bar connections are clean and tight. Use a 6" long, 10 gauge insulated wire as a jumper between Motor Solenoid Terminals "C" and "A" to activate Solenoid. Replace Solenoid if it fails to activate.



3. Verify that Relief Valve Pressure Settings are correct. Refer to **RELIEF VALVE PRESSURE SETTING** procedure in this manual. Also, make sure Flow Control Valve (on Pump) is open. Perform Platform Opening & Closing Speed Adjustment procedure. If pressure settings can't be corrected, if Platform Opening and Closing Speed can't be adjusted or if Pump runs hot and excessively noisy, replace Pump.



TYPICAL PUMP MOTOR SOLENOID

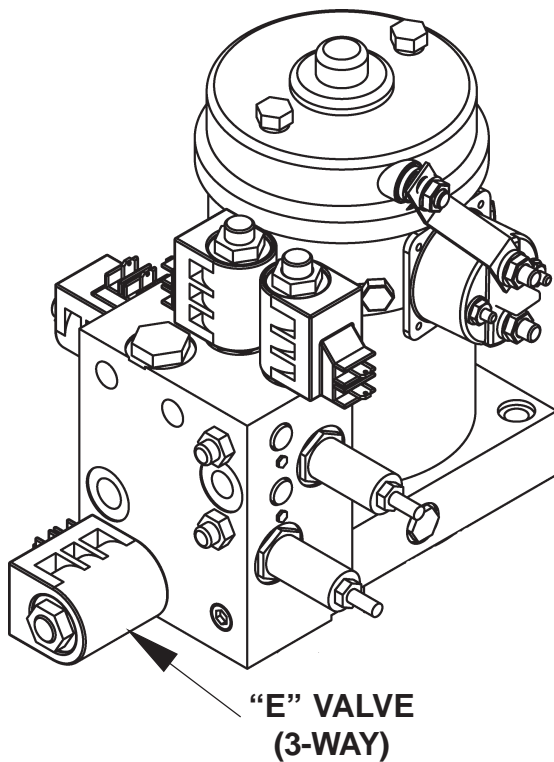
FIG. 6

PLATFORM WILL NOT FOLD - Continued

⚠ WARNING

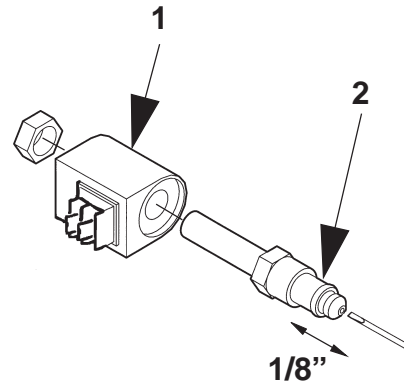
Make sure Liftgate Platform is open and resting on the ground before performing the following step.

4. Check the "E" Valve (**FIG. 7A**) Stem by removing the Coil Assembly (**ITEM 1, FIG. 7B**). Unscrew the Valve Stem (**ITEM 2, FIG. 7B**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8") clean it. If the Plunger does not move freely after cleaning, replace the Valve Stem.



TYPICAL PUMP/MOTOR SOLENOID VALVES
(POWER DOWN VERSION SHOWN)

FIG. 7A



TYPICAL SOLENOID VALVE
SHOWN DISASSEMBLED

FIG. 7B

5. Check for bent parts on the Liftgate that could interfere with normal operation.
6. Check if hydraulic fluid is streaming from breather plug.

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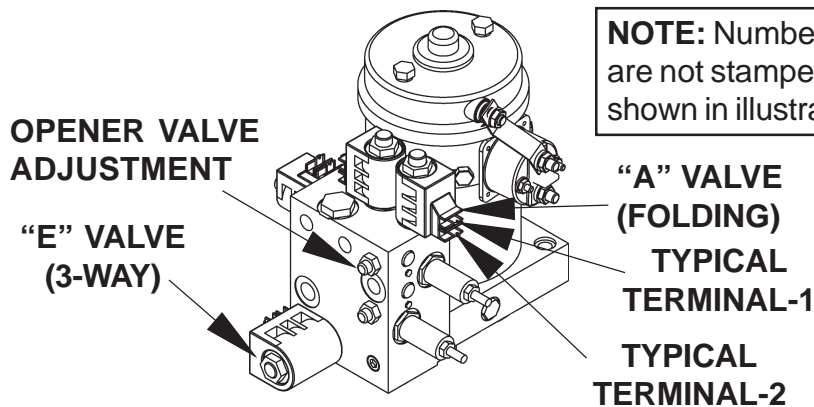
PLATFORM WILL NOT UNFOLD

⚠ WARNING

Before doing the following procedure, set up guarded area around the Platform to keep people from entering.

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

1. Flow of hydraulic fluid may be restricted. Turn Opener Valve adjustment (**FIG. 8A**) counter-clockwise to open the valve. If necessary, do the **PLATFORM OPENING SPEED ADJUSTMENT** in this section.

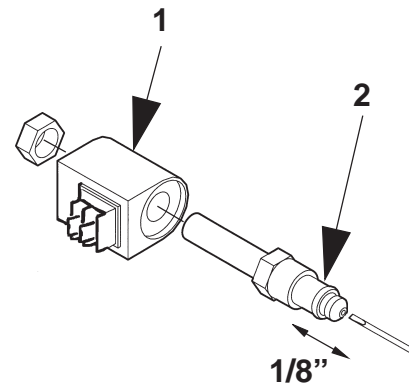


NOTE: Numbers for the electrical terminals are not stamped on the Valve Coil. Numbers shown in illustration are for reference only.

TYPICAL PUMP/MOTOR VALVES & ELECTRICAL CONNECTIONS (POWER DOWN VERSION SHOWN)
FIG. 8A

2. Check if the "A" Valve (**FIG. 8A**) is energized. Connect voltmeter to Terminal-1 and Terminal-2 shown in **FIG. 8A**. Activate the **UNFOLD** toggle switch and **FOLD/UNFOLD** toggle switches. Correct indication is +11 to +12.6 Volts DC. If indication is incorrect, check Control Switch and wiring to "A" Valve (refer to **ELECTRICAL SCHEMATICS** section). Replace faulty wiring or Control Switch as required. If the Voltmeter indicates +11 to +12.6 Volts DC and "A" Valve still does not operate, replace "A" Valve.

3. Check the "E" Valve (**FIG. 8A**) Stem by removing the Coil Assembly (**ITEM 1, FIG. 8B**). With platform supported, unscrew the Valve Stem (**ITEM 2, FIG. 8B**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8") clean it. If it does not move freely after cleaning, replace the Valve Stem.



TYPICAL SOLENOID VALVE SHOWN DISASSEMBLED
FIG. 8B

PLATFORM WILL NOT UNFOLD - Continued

4. Check for damage and corrosion at Platform pivot points. Steam clean corrosion from pivot points. Replace bushings at pivot points if required.
5. Check for bent and broken parts on the Liftgate that could interfere with normal operation. Look at Columns, Runners, Tandem Rollers and Platform (bent pins). If Platform Hinge Pins are bent, refer to Platform Pin Adjustment Tech Alert.
6. Check for weak Platform torsion spring. Replace if necessary.

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TROUBLESHOOTING GRAVITY DOWN

PLATFORM WILL NOT RAISE, MOTOR RUNS

1. Check the hydraulic fluid level in the Reservoir.

GRAVITY DOWN LIFTGATES: Lower the Platform to the ground. Clean dirt and fluid from top of Reservoir in Pump Box. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

POWER DOWN LIFTGATES: Raise the Platform to bed height. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

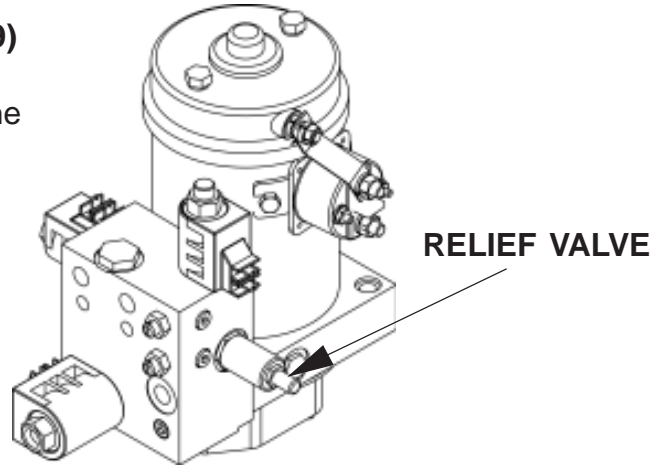
2. Check for bent parts on the Liftgate that could interfere with normal operation. Look at Columns, Runners, Tandem Rollers.

⚠ WARNING

Make sure Liftgate Platform is open and resting on the ground before performing the following step.

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

3. Check the High Pressure Relief Valve (**FIG. 9**) for contamination or defective operation. Lower the Platform to the ground. Remove the Relief Valve. Clean or replace Valve as required.



**GRAVITY DOWN PUMP/MOTOR
RELIEF VALVE LOCATION**

FIG. 9

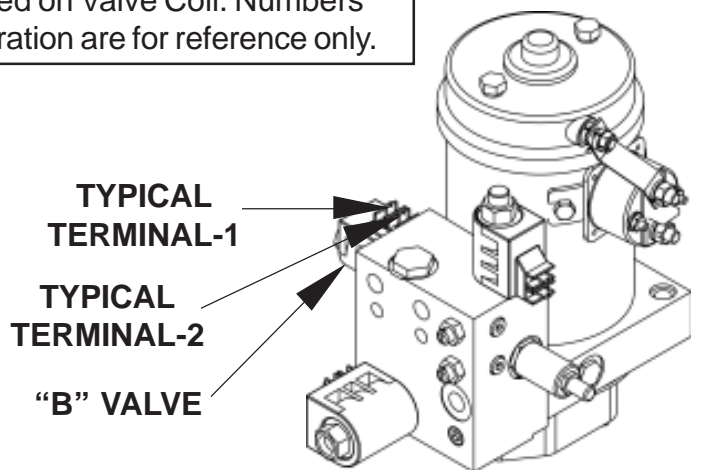
4. Adjust Relief Valve operating pressure according to **RELIEF VALVE PRESSURE SETTING** procedure.

PLATFORM WILL NOT LOWER

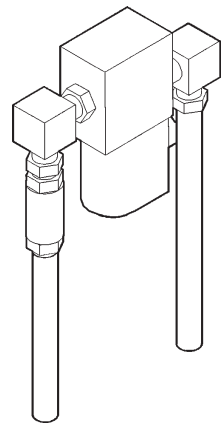
NOTE: For Dual Pump system, check Secondary Pump and Motor first.

1. Try lowering Platform (activate **DOWN** toggle switch). Only the Motor Solenoid and “B” Valve (both located in the Pump Box) (**FIG. 10A**) and “D” Valve (on top of LH and RH Columns) (**FIG. 10B**) should be energized while lowering Platform. Connect voltmeter to Terminal-1 and Terminal-2 on each Valve shown in **FIG. 10A**. Correct indication for “B” and “D” Valves is +11 to +12.6 Volts DC. If indications are incorrect, check Control Switch and wiring to that Valve (refer to **ELECTRICAL SCHEMATICS** section). Replace faulty wiring or Control Switch as required.

NOTE: Numbers for the electrical terminals are not stamped on Valve Coil. Numbers shown in illustration are for reference only.



**GRAVITY DOWN PUMP/MOTOR VALVE &
ELECTRICAL CONNECTIONS
FIG. 10A**

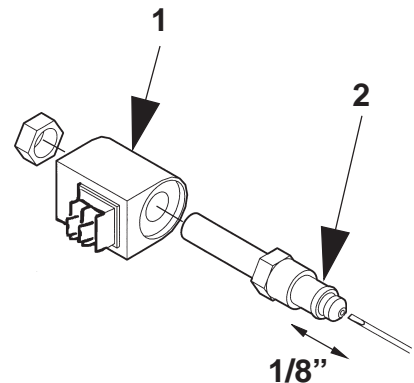


**“D” VALVE
FIG. 10B**

⚠ WARNING

Make sure Liftgate Platform is open and resting on the ground before performing the following step.

2. Check Valve Stems (**FIG. 10C**) by removing from the Coil Assembly (**ITEM 1, FIG. 10C**). With platform supported, unscrew the Valve Stem (**ITEM 2, FIG. 10C**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8”) clean it. If the Plunger does not move freely after cleaning, replace the Valve Stem.

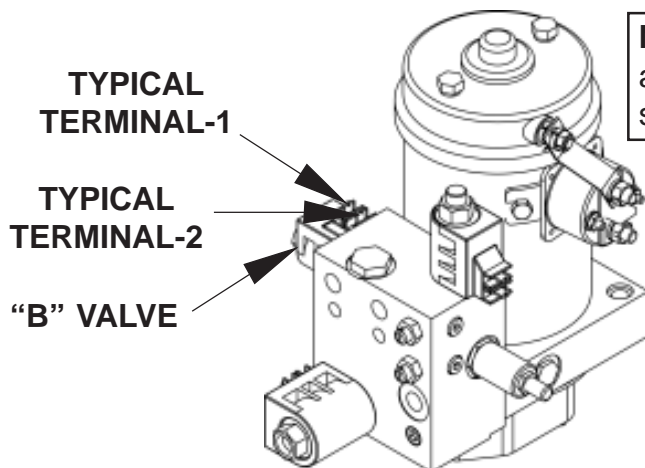


**TYPICAL SOLENOID VALVE
SHOWN DISASSEMBLED
FIG. 10C**

PLATFORM LOWERS SLOWLY

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

1. Check if the “B” Valve Coil (**FIG. 11A**) (located in the Pump Box) is getting power. Connect voltmeter to Terminal-1 and Terminal-2 shown in **FIG. 11A**. Activate the **DOWN** toggle switch. Correct indication is +11 to +12.6 Volts DC. If the Voltmeter does not indicate +11 to +12.6 Volts DC, check Control Switch and wiring to “B” Valve (refer to **ELECTRICAL SCHEMATICS** section). Replace faulty wiring or Control Switch as required. If the Voltmeter indicates +11 to +12.6 Volts DC and Valve still does not operate, replace the Valve.



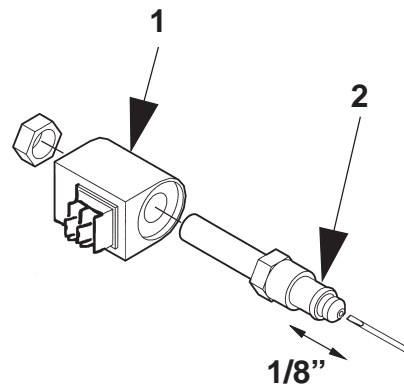
NOTE: Numbers for the electrical terminals are not stamped on the Valve Coil. Numbers shown in illustration are for reference only.

**GRAVITY DOWN PUMP/MOTOR VALVE & ELECTRICAL CONNECTIONS
FIG. 11A**

⚠ WARNING

Make sure Liftgate Platform is open and resting on the ground before performing the following step.

2. Check the Valve Stem (**FIG. 11B**) by removing the Coil Assembly (**ITEM 1, FIG. 11B**). With platform supported, unscrew the Valve Stem (**ITEM 2, FIG. 11B**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8”) clean it. If Plunger does not move freely after cleaning, replace the Valve Stem.
3. Check the Pressure Compensation Valves (see **PLATFORM RAISES AND LOWERS UNEVEN**).
4. Check for bent and broken parts on the Liftgate that could interfere with normal operation.



**TYPICAL SOLENOID VALVE SHOWN DISASSEMBLED
FIG. 11B**

TROUBLESHOOTING POWER DOWN

PLATFORM WILL NOT RAISE, MOTOR RUNS

1. Check the hydraulic fluid level in the Reservoir.

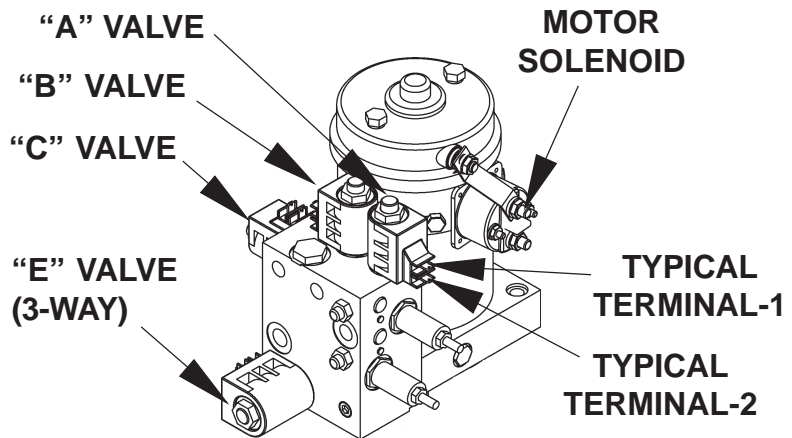
GRAVITY DOWN LIFTGATES: Lower the Platform to the ground. Clean dirt and fluid from top of Reservoir in Pump Box. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

POWER DOWN LIFTGATES: Raise the Platform to bed height. Fill the Reservoir to correct level indicated on Sight Glass (Pump Box).

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

2. Try raising Platform (activate **UP** toggle switch). Only the Motor Solenoid (**FIG. 12A**) should be energized while raising Platform. The "A", "B", "C" and "E" Valves (**FIG. 12A**) (located in the Pump Box) should not be energized. Connect voltmeter to Terminal-1 and Terminal-2 on each Valve shown in **FIG. 11A**. Correct indication is 0 Volts DC. If Voltmeter indicates +11 to +12.6 Volts DC for any of the Valves, check Control Switch and wiring to the Valve (refer to **ELECTRICAL SCHEMATICS** section). Replace faulty wiring or Control Switch as required.

NOTE: Numbers for the electrical terminals are not stamped on the Valve Coil. Numbers shown in illustration are for reference only.



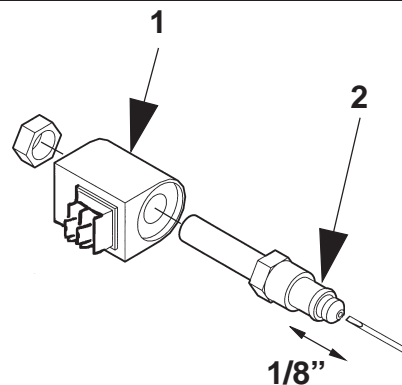
**POWER DOWN PUMP/MOTOR VALVES
& ELECTRICAL CONNECTIONS
FIG. 12A**

⚠ WARNING

Make sure Liftgate Platform is open and resting on the ground before performing the following step.

3. The "E" Valve Solenoid may be stuck in the "open" position. Check Solenoid Valve Stem (**FIG. 12A**) by removing the Coil Assembly (**ITEM 1, FIG. 12B**). With platform supported, unscrew the Valve Stem (**ITEM 2, FIG. 12B**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8") clean it. If it does not move freely after cleaning, replace the Valve Stem.

4. Check for bent and broken parts on the Liftgate that could interfere with normal operation.

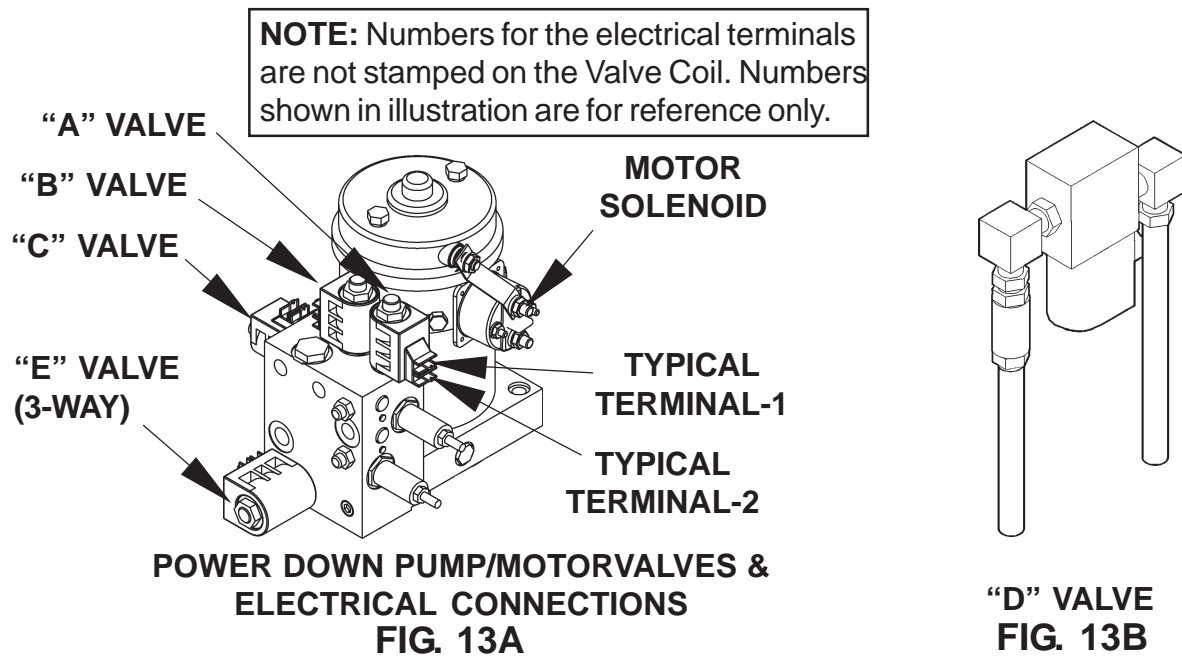


**TYPICAL SOLENOID VALVE
SHOWN DISASSEMBLED
FIG. 12C**

PLATFORM WILL NOT LOWER

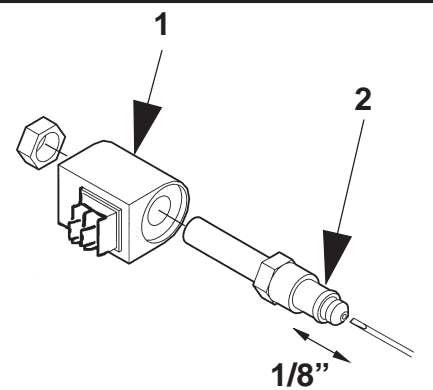
NOTE: For Dual Pump system, check Secondary Pump and Motor first.

1. Try lowering Platform (activate **DOWN** toggle switch). Only the Motor Solenoid, "B" Valve and "C" Valve (located in the Pump Box) (**FIG. 13A**) and "D" Valve (on top of LH and RH Columns) (**FIG. 13B**) should be energized while lowering Platform. The "A" and "E" Valves should not be energized. Connect voltmeter to Terminal-1 and Terminal-2 on each Valve shown in **FIG. 13A**. Correct indication for "A" and "E" Valves is 0 Volts DC. For "B", "C" and "D" Valves correct indication is +11 to +12.6 Volts DC. If any indications are incorrect, check Control Switch and wiring to that Valve (refer to **ELECTRICAL SCHEMATICS** section). Replace faulty wiring or Control Switch as required.



⚠ WARNING
 Make sure Liftgate Platform is open and resting on the ground before performing the following step.

2. Check Solenoid Valve Stems (**FIG. 13D**) by removing the Coil Assembly (**ITEM 1, FIG. 13D**). With platform supported, unscrew the Valve Stem (**ITEM 2, FIG. 13D**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8") clean it. If it does not move freely after cleaning, replace the Valve Stem.



TYPICAL SOLENOID VALVE SHOWN DISASSEMBLED
FIG. 13C

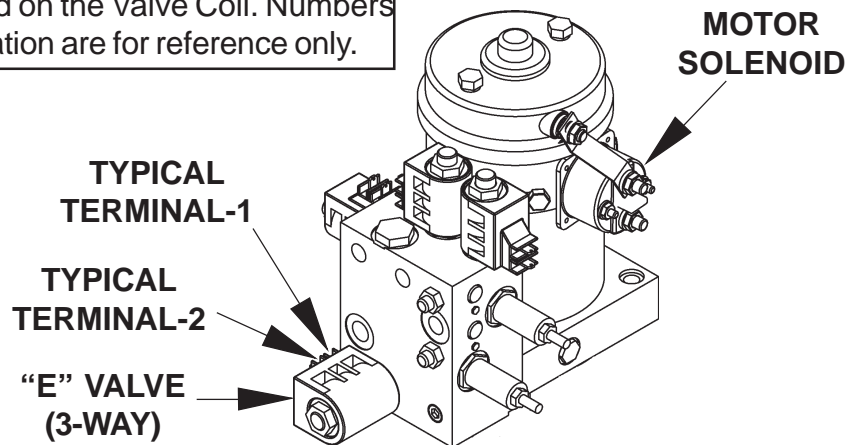
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PLATFORM LOWERS SLOWLY

NOTE: For Dual Pump system, check Secondary Pump and Motor first.

1. Try lowering Platform (activate **DOWN** toggle switch). Make sure Motor Solenoid (located in the Pump Box) (**FIG. 14A**) is energized and “E” Valve is not energized while lowering Platform. Connect voltmeter to Terminal-1 and Terminal-2 on “E” Valve shown in **FIG. 14A**. The correct indication on Voltmeter is 0 Volts DC when “E” Valve is not energized. If the Voltmeter indicates +11 to +12.6 Volts DC, check Control Switch and wiring to that Valve (refer to **ELECTRICAL SCHEMATICS** section). Replace faulty wiring or Control Switch as required.

NOTE: Numbers for the electrical terminals are not stamped on the Valve Coil. Numbers shown in illustration are for reference only.



**POWER DOWN PUMP/MOTOR VALVES & ELECTRICAL CONNECTIONS
FIG. 14A**

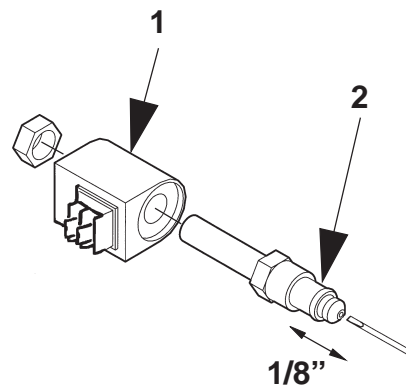
⚠ WARNING

Make sure Liftgate Platform is open and resting on the ground before performing the following step.

2. Check Solenoid Valve Stems (**FIG. 14B**) by removing the Coil Assembly (**ITEM 1, FIG. 14B**). With platform supported, unscrew the Valve Stem (**ITEM 2, FIG. 14B**) from the Pump. Push on the plunger, located inside the Valve Stem, with a small screwdriver. If the Plunger does not move freely (approximately 1/8”) clean it. If Plunger does not move freely after cleaning, replace the Valve Stem.

4. Check for bent and broken parts on the Liftgate that could interfere with normal operation.

5. Check the Pressure Compensation Valves (see **PLATFORM RAISES AND LOWERS UNEVEN**).



**TYPICAL SOLENOID VALVE SHOWN DISASSEMBLED
FIG. 14B**

